A Work Project, presented as part of the requirements for the Award of a Master's Degree in Finance from the Nova School of Business and Economics.

CANOPY GROWTH: DRIVING GROWTH THROUGH EXPANSION

MARTA CORREIA DE CARVALHO

MATILDE DA FONSECA SIMÕES

Work project carried out under the supervision of:

Rosário André

03-01-2020

Abstract

The following equity research on Canopy Growth Corporation, a cannabis and hemp producer, will provide an overview of the current state of the company, focusing on its strategy, sales and products, as well as an overview of the sector. Subsequently, there will be an analysis of the company's financial position followed by a detailed forecasting of its financial statements in order to obtain the enterprise value of Canopy Growth. At last, given an estimated share price of C$ 29.02, compared to the current share price of C$ 27.31, a hold recommendation is presented for potential investors of the firm.

Keywords

Cannabis

Legalization

Growth

Internationalization

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

NOVA SCHOOL OF BUSINESS & ECONOMICS

MASTER IN FINANCE

CANOPY GROWTH

COMPANY REPORT

CANNABIS INDUSTRY

6 JANUARY 2020

STUDENT: MARTA CARVALHO 30190@novasbe.pt
STUDENT: MATILDE SIMÕES 26322@novasbe.pt

With Dope there's hope

Hold on!... to Canopy's Growth stock

- We start the analysis of Canopy Growth Corporation with a recommendation to hold the WEED stock given our FY20 target price of **C$29.02**, compared to the current price of **C$27.31**. The difference in prices corresponds to an upside of, approximately, **6.3%**. This leads us to believe that it is preferable to hold the stock as it might yield higher returns in the future.
- Canopy Growth is currently the **biggest company by market capitalization in the cannabis industry (C$9.5B)**, with an expected CAGR of 30-35% mainly driven by the forthcoming legalization for recreational use internationally, and the prospects of the new high margin cannabis 2.0 segment.
- The company is investing in the Cannabis 2.0 segment, recently legalized in Canada (October 2019), an opportunity supported by the investment of C$5B from Constellation Brands, which provided expertise in operations, product distribution and marketing.
- We model the target share price using a DCF valuation, discounting FCF at a WACC level of 6.05% and a perpetuity growth rate of 3.6%.

Company description

Canopy Growth Corporation (TSX:WEED, NYSE:CGC) is a Canadian based company, that dedicates to the production, distribution and sale of cannabis for medical and recreational purposes. The company was founded in 2013 by Bruce Linton and Chuck Rifici, formerly under the name Tweed Marijuana Inc., and renamed Canopy Growth Corporation in 2015.

Recommendation:	**HOLD**
Vs Previous Recommendation	*HOLD*
Price Target FY20:	**C$ 29.02**
Vs Previous Price Target	*C$ 28.58*
Price (as of 6-Jan-2019)	**C$ 27.31**

Bloomberg; Company data; Analysts estimates

52-week range (C$)	18.23-70.98
Market Cap (C$ b)	9.5
Outstanding Shares (m)	348.33

Source: Bloomberg; Company Report

Source: Bloomberg

(Expressed in CDN $000's)	2019	2020E	2021F
Revenues	226 341	486 564	625 670
EBITDA	- 519 929	- 697 756	- 928 880
Net Loss	- 683 858	- 661 072	- 836 474
EPS (in C$)	- 2.51	- 2.48	- 2.34
P/E	-11.6x	-11.7x	-12.4x
Sales growth (%)	190%	115%	29%

Source: Company Data; Analysts Estimates; Bloomberg

NOVA SCHOOL OF BUSINESS & ECONOMICS

Table of Contents

Company Overview

Company description

Canopy Growth Corporation ("Canopy Growth", "Canopy" or the "Company") is a world-leading diversified cannabis and hemp company, with operations in 15 countries across 5 continents and headquartered in Smith Falls, Canada. The Company was founded in 2013 by Bruce Linton and Chuck Rifici, formerly under the name Tweed Marijuana Inc., and renamed Canopy Growth in 2015. The main activities are the production, distribution, and sale of cannabis for global medical and the Canadian recreational use markets.

Exhibit 1: International subsidiaries, partnerships or business activities

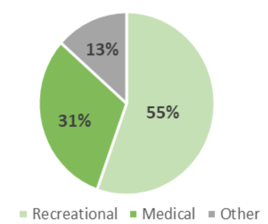
Source: Company Data

During 2019, Linton, Canopy Growth's CEO, was fired. December of the same year, Canopy appointed Constellation Brands CFO and Canopy's executive, David Klein, has the new chief executive officer.

Canopy Growth became the first licensed cannabis producer in Canada to go public in 2014, and is currently traded on the Toronto Stock Exchange ("TSX"), listed under the symbol "WEED". In 2018 became the first cannabis company to be listed on the NYSE, under the trading symbol "CGC". Canopy Growth is currently the largest marijuana stock in the world by market capitalization (C$9.5 billion).

Through its wholly-owned subsidiaries, Canopy Growth operates numerous state-of-the-art production facilities with over 4.8 million square feet of indoor and greenhouse production capacity. Net revenue in fiscal 2019 was **C$226.3 million** (C$140.5 million of gross revenue from new Canadian recreational channel and C$78.9 million in global medical sales), as compared to $77,948 in fiscal 2018. The year-over-year increase is attributable to the launch of the Canadian recreational cannabis market in October 2018. In 2019 the company reported that it employed over 3000 workers.

Exhibit 2: 2019 Revenue by segment



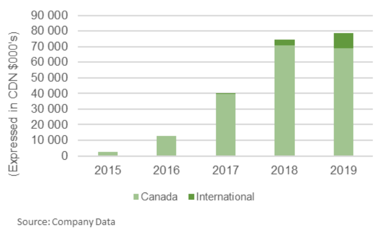
Source: Company Data

Product & Sales Analysis

Canopy Growth offers distinct brands and curated cannabis varieties in dried flower, oils, concentrates and soft gel capsule forms. In October 2019, with the legalization of Cannabis 2.0, Canopy added to its product portfolio edibles, beverages and vapes.

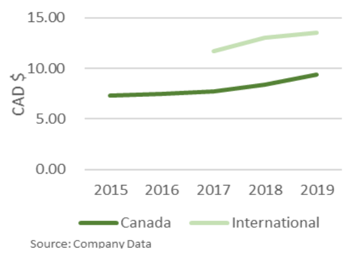
Dried flower is the core product of the company representing more than half of total revenues (53%) in 2019. This corresponds to C$134 million, from which C$82 million came from the recreational segment and C$51 million from medical. Although there was a decrease of dry bud medical sales in comparison to 2018 (C$51 million vs C$58 million), the overall revenue of this product type registered 128% increase, driven by the legalization of the recreational use in October 2018. The cannibalization observed, from medical sales to recreational, can be explained by the price difference between the two segments. While recreational cannabis registered an average price of C$8.65 *per gram* (only sold in Canada), medical cannabis registered C$9.39 in Canada and C$13.53 Internationally.

Exhibit 3: Canadian and International Medical Revenues



Canopy Growth also produces cannabis extracts that use supercritical fluid CO2 extraction technology to obtain **Oils** and **Concentrates.** This process extracts the major cannabinoids (THC and CBD), as well as the minor cannabinoids, terpenes, and flavonoids that contribute to the overall medicinal value of medical cannabis, resulting in a highly concentrated resin that can be dissolved in a food oil carrier to comply with government regulations and to make it easier to administer orally.

Exhibit 4: Canopy Price (per gram) Canadian and International Medical Cannabis

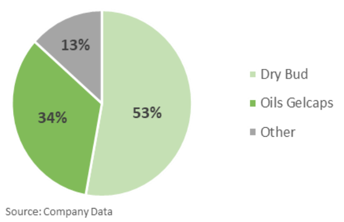


In 2016, Canopy introduced **Softgel Capsules** as a way of consuming the product in a pill form. These capsules are filled with extract cannabis resin, available in a variety of medicinal concentrations (micro/full doses), providing an accurate dosing. This form has several advantages such as being discreet, portable and relief from smoking.

Compared to dried flower, oils and softgel capsules yield much higher margins. Jointly, they accounted for 34% of the revenue in 2019, generating C$85 million, from which $57 million came from the recreational segment and C$27 million from medical.

Nonetheless, Canopy Growth noted an oversupply of oils and softgels in certain Canadian provinces. Retailers were not selling these products, resulting in a glut of inventory due, in part, to underdeveloped retail markets in several provinces. Based on this assessment, Canopy determined returns and pricing adjustments in the amount of C$32,727 and have reduced the production of certain recreational cannabis oil and softgel products.

Exhibit 5: 2019 Revenue by form



The remaining 13% of the revenues came from other products, reaching sales of C$34 million, as compared to C$3.5 million in 2018. The year-over-year increase is attributable to sales of Storz & Bickel **vaporizer devices**, along with revenue from other strategic sources including extraction services and clinic partners.

Canopy will produce cannabis-infused beverages in the new 160,000 square foot beverage facility in Smiths Falls. The Company developed a proprietary process that distils whole flower cannabis into a clear liquid that will be used as an active ingredient in beverages.

Canopy also has a partnership with Bean & Bud to produce a line of premium cannabis-infused craft chocolates with 5 milligrams of THC per serving.

Strategy Analysis

Canopy Growth has been pursuing a strategy to position itself as the dominant, global leader in cannabis and hemp-based products. At the expense of an aggravation of its financial losses in the short term, the company has been committed to an expansion strategy that sacrifices profits to invest heavily in growth.

The company has been committed to an expansion strategy that sacrifices profits to invest heavily in growth

With the liquidity provided by Constellation Brands cash injection of C$5 billion in October 2018, Canopy was able to follow a strategy that prioritizes on innovation and product development, production capacity and capability, and global expansion through mergers and acquisitions.

However, Canopy Growth failed to hit revenue and profitability targets in 2019. There were external factors influencing this scenario, namely lower store rollouts and rising black market sales, related to the slow pace at which Health Canada is processing the requirements for licenses and the higher prices that legal cannabis have over illegal sources. There were also internal factors that aggravated this scenario, like the miscalculations that led to an oversupply of oils and softgels. Hence, investors manifested concerns with the capability of Canopy to generate returns.

Nonetheless, we believe that these investments were necessary to gain competitive advantages mainly through synergies, elimination of competition and innovation, therefore increasing market share and fulfill Canopy's goal.

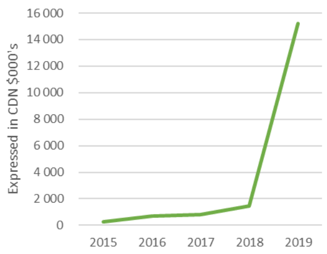
Also influencing Canopy's strategy is the recent nomination of David Klein as the new CEO. Upon the announcement of the new leadership, the stock shot up by 14 percent, indicating a high confidence in Klein's leadership abilities before he had even assumed the post.

We believe that Klein will bring some stability to the Company and that he will be able to consolidate what was done in the previous years: he already has experience working with Canopy since he was pointed chairman of the company in October 2019, giving him ample time to make inquiries and become prepared for making executive decisions. Additionally, when David Klein was Constellation's CFO, his skills and contributions to the betterment of the company were officially recognized as he was awarded the title of "best CFO" by Institutional Investor magazine three years consecutively[1], further proving his solid reputation as a successful leader.

- Innovation and Product Development (R&D)

Research and development expense in fiscal 2019 was C$15.2 million, as compared to C$1.5 million in fiscal year 2018. The year-over year increment of C$13.8 million is attributable to increased compensation costs due to an addition of the number of employees conducting research into several intellectual property opportunities, and other strategic investments including developing patent-pending technology in the following areas:

Exhibit 6: R&D Expenditure Evolution



Source: Company Data

- New cannabis-based product form factors that will enter the market when permitted (expect to be in late 2019);
- Device and delivery technology, including vaporizers;
- Growth patterns under different environmental scenarios and the genetics of various strains;
- Production of encapsulated cannabis oil capsules in higher volumes; and
- Equipment engineered specifically for the cannabis industry, such as extraction equipment.

By comparison, Aurora Cannabis R&D expense in 2019 was very similar to Canopy, around C$14.7 million, while Aphria only registered $1,391.

Canopy is also conducting clinical trials for CBD-based human and animal health products. Through Spectrum Therapeutics' research and development initiatives, Canopy continues to build a portfolio of intellectual property, with 130 patents issued up to date.

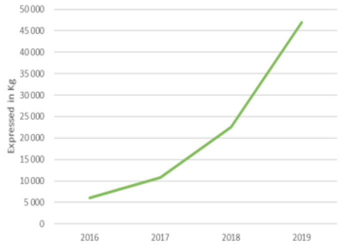
Canopy Growth also acquired a portfolio of hemp-specific intellectual property when it acquired Colorado-based Ebbu Inc., in November 2018. With more than 40 cannabis-related patents filed representing over 1500 inventions, Ebbu science team has become a global leader in data-driven and lab-tested cannabinoid research.

[1] Allen lee. 2019. "20 things you didn't know about David Klein". https://moneyinc.com/david-klein/

▪ Production Capability and Capacity

For Canopy, Canada continues to represent the majority of the revenue, with its federally-regulated recreational and medical markets, with approximately 4,8 million square feet of licensed capacity for greenhouse and indoor cultivation, post-harvest processing, oil extraction, encapsulation, advanced manufacturing for pre-rolled joints and chocolates, vape manufacturing and beverage production capability.

Exhibit 7: Harvested Cannabis (Kg)



Source: Companies Reports

In 2019, Canopy harvested 46,927 kilograms of cannabis, as compared to 22,513 kilograms in 2018. The increase is attributable to the build-out of production capability over the last fiscal year in preparation for the launch of the Canadian recreational market.

Accordingly, 24,320 kilograms and kilogram equivalents of cannabis were sold during 2019, up from 8,708 kilograms and kilogram equivalents in fiscal 2018. The increase was due to the launch of the Canadian recreational market on October 2018, that accounted for 67% of total cannabis sold (Medical 33%), of which 84% was sold directly to the Canadian provinces and the remainder through direct retail and on-line consumer channels.

Canopy used to be the leader in terms of production capacity in relation to its peers. However, Aurora Cannabis has ramped up its production capabilities over the past year, producing now 57,442 kilograms of cannabis and selling 36,628 kilograms.

Currently Canopy has 27 cannabis retail stores operating under the Tweed or Tokyo Smoke banner, and an e-commerce platform. Canopy has also received licences, rights to licences or permits to apply for licences to operate cannabis retail stores in 4 provinces:

- Newfoundland & Labrador - licences for up to 7 stores;
- Manitoba - licences for up to 15 stores;
- Saskatchewan - licences for up to 6 stores; and
- Alberta – development permits for over 20 store locations.

In Ontario, Canopy has entered into multi-year licensing agreements to enable its partners to open one Tokyo Smoke branded and one Tweed-branded cannabis store.

▪ Global Expansion and M&A Activity

M&A activity in the cannabis industry is characterized for being fierce. Companies want to gain as much market share as they can in this early stage while there is a lot of space to grow. Therefore, and in accordance with industry "standards", Canopy Growth has been under an intense acquisition activity that aims to accelerate the global expansion strategy, including entering the United States market when federally permissible to do so; investing in the recently-legalized hemp market in the United States; building-out infrastructure in new markets; investing in intellectual property development and advancing clinical research programs.

Hence, aiming to accelerate the pathway into the United States cannabis market, in April 2019, Canopy Growth entered into an agreement with Acreage Holdings, Inc. ("Acreage"), a leading multi-state cannabis operator in United States, that owns or has managed services agreements in place for cannabis-related licenses across 20 U.S. states, including 87 dispensaries and 22 cultivation and processing facilities. With this agreement, Canopy Growth has the right, to acquire 100% of the shares of Acreage, with the requirement to do so at such time as cannabis production and sale becomes federally-permissible in the United States.

Upon completion of the deal, Acreage shareholders will receive an immediate payment of US$300 million and, upon Canopy Growth's exercise of the Right, Acreage shareholders will receive 0.5818 of a common share of Canopy for every Acreage share held, subject to adjustment in accordance with the plan of arrangement. This represented total consideration of approximately US$3.4 billion at April 16, 2019, which reflects a 41.7% premium over the 30-day volume-weighted average price of Acreage Holdings shares.

The odds appear to be in favor of the deal to happen since in November 2019, for the first time in American history, a congressional committee approved a marijuana legalization bill.

Nonetheless, this deal also carries some risks that should not be neglected as the fact that there will be a massive dilution to Canopy Growth's shareholders[2].

It is also part of Canopy Growth expansion strategy to further grow operations in the European market. Therefore, in March 2019, the company completed the all-cash acquisition of Spain-based licensed cannabis producer Cáñamo y Fibras Naturales, S.L. ("Cafina"), one of three companies in Spain authorized to cultivate, distribute and export cannabis containing more than 0.2% of THC for medicinal and research purposes. Cafina is also licensed to cultivate hemp. This acquisition aims to expand the European production footprint and improve the

[2] Sean Williams. 2019. "3 Crazy Facts About Canopy Growth's Largest Acquisition in Marijuana History". https://www.fool.com/investing/2019/04/21/3-crazy-facts-about-canopy-growths-largest-acquisi.aspx

long-term positioning to address demand across Europe for medical cannabis and CBD products.

In May 2019, Canopy Growth acquired Germany-based C³ Cannabinoid Compound Company ("C³"), Europe's largest cannabinoid-based pharmaceuticals company, in a C$343 million deal, furthering Canopy Growth's expansion into European markets with prescription medicines. C³ has a total of five medicines in the market and in 2018 supplied approximately 19,500 patients in Germany, a year-over-year increase of 85%, achieving worldwide sales of C$41.5 million.

In the same month, Canopy Growth invested C$55 million to acquire London, England-based This Works, a global leader in natural skincare and sleep solutions with a customer base spanning 35 countries.

More recently, Canopy Growth decided to invest in the sports nutrition market, currently estimated at being worth $50 billion worldwide[3], by acquiring 72% of North American-based, BioSteel Sports Nutrition. Initial cash consideration was $50,535 and the purchase price will be subject to a further adjustment based on a multiple of BioSteel's 2019 net revenue. This acquisition allows Canopy Growth to enter the sports nutrition space with a strong and growing brand, that has more than 10,000 points of distribution in Canada and the US, allowing Canopy Growth to scale out its own CBD beverage products in the future with this established retail chain. BioSteel has a strong sports nutrition consumer base in the North American market and Canopy Growth views the adoption of CBD in future BioSteel offerings as a potentially significant and disruptive growth driver for the business given the negative effects of prescription painkillers and that athletes are looking for healthier alternatives[4]. BioSteel's products have been used by 70% of North America's major sports leagues, including the NFL, NHL, MLB. The challenge, however, will be in convincing different leagues to allow CBD to be used as a treatment option. Although there's interest from players in using CBD, there is no guarantee that the substance will be permitted.

Furthermore, just like with many cannabis products, the competition in this segment is intense. Canopy rival, Aurora Cannabis partnered with UFC to research the use of hemp-derived CBD as an effective treatment for pain, inflammation, wound-healing, and recovery on mixed-martial-art athletes. Unlike Canopy, however, the deal does not extend any further to potential retail partnerships, so in this sense, Canopy does hold an edge over its rival. Tilray,

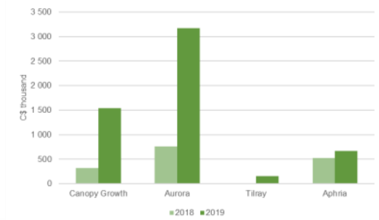
[3] M.Shahbandeh.2019. "Global sports nutrition market". https://www.statista.com/statistics/450168/global-sports-nutrition-market/
[4] NewsWire. 2019. "Canopy Growth Announces purchase of major stake in Biosteel Sports Nutrition Inc". https://www.prnewswire.com/news-releases/canopy-growth-announces-purchase-of majority-stake-in-biosteel-sports-nutrition-inc-300929561.html

another Canadian cannabis producer, has an agreement to provide CBD ingredients for wellness products backed by former professional golfer Greg Norman.

Canopy Growth presented a loss of C$1.4 billion and a deeper analysis reveals that C$826 million of it was due to M&A activity[5]. While Canopy has significant cash reserves, the rate at which it is allocating funds on acquisitions might lead to a scarcity of capital within the next quarters if management doesn't slow down.

Goodwill

Exhibit 8: Goodwill registered per company



Source: Companies Reports

The intense M&A activity entails consequences that affect all major players. With increased competition to gain market share, cannabis companies have been overpaying for acquisitions and goodwill has exponentially increased[6]. Players in the cannabis industry are conquering the market by acquiring smaller players, even if it requires the payment of sizable amounts of cash. The fundamental idea for this M&A activity is to: increase production capacity faster (buying already established greenhouses and cultivation fields instead of building themselves) and absorb companies that have already invested in R&D and have valuable intellectual property, preferably companies that already have licenses to produce in other countries. In the end, the goodwill ends up with high values, which leads us to believe the company might be overpaying for smaller ones it is absorbing.

Canopy Growth's registered an increase of almost 400% in goodwill, from C$314 million in 2018 to C$1.5 billion in 2019. Constellation C$5 billion cash injection in 2018 allowed Canopy to more than double the number of companies acquired during the following months.

Leading the ranking of premiums paid in acquisitions is Aurora Cannabis with a goodwill of C$3.2 billion, which account for 57% of total assets and is now larger than the company's market cap of C$2.38 billion on the NYSE[7]. Aurora claimed at least half, if not close to 80%, of the value of the deals it made in the last three year as goodwill, including the C$2.64 billion acquisition of MedReleaf, of which C$2 billion was declared as goodwill.

With relatively lower goodwill on their balance sheets, Aphria registers C$669 million, much of which is tied to its 2018 purchase of Nuuvera, and Tilray with C$155 million in goodwill from the purchase of Manitoba Harvest.

[5] Mark Prvulovic.2019. "How Big a Deal Is Canopy Growth's Recent Sports Beverage Acquisition?". https://www.fool.com/investing/2019/10/08/how-big-a-deal-is-canopy-growths-recent-sports-bev.aspx
[6] Sean Williams. 2019. "Marijuana Stock Goodwill Is a Potential $10 Billion Powder Keg". https://www.fool.com/investing/2019/10/03/marijuana-stock-goodwill-is-a-potential-10-billion.aspx
[7] Sean Williams. 2019. "The Craziest Aurora Cannabis Statistic You'll Ever See". https://www.nasdaq.com/articles/the-craziest-aurora-cannabis-statistic-youll-ever-see-2019-11-21

Hence, four of the biggest marijuana licensed producers have more than C$5.5 billion in combined goodwill. The risk implied is better explained in the "Risks & Uncertainties" section.

Shareholder structure

Canopy Growth's authorized share capital is an unlimited number of common shares of which 348,566,575 were issued and outstanding as at November 14, 2019.

After an investment of C$5 billion in 2018, the global beverage leader Constellation Brands Inc. ("Constellation") became Canopy Growth's major shareholder, owning 38% of the shares.

After an investment of C$5 billion in 2018, the global beverage leader Constellation Brands Inc. ("Constellation") became Canopy Growth's major shareholder, owning 38% of the shares. As a result, Constellation has a significant influence and control over Canopy's business and operations due to its ownership interest and its rights under the Second Amended Investor Rights Agreement.

Having such a big private investor in the company has several implications. As an early stage company, Canopy will be receiving the support and expertise of a well stablished corporation in the areas of operations, product distribution and marketing, building long-term competitive advantages, that can potentially bring returns for the shareholders.

However, Constellation is in a position to exercise significant impact over Canopy, including matters requiring shareholder approval, such as the election of directors, change of control transactions and the determination of other significant corporate actions. There can also be no assurance that the interests of Constellation will align with the interests of the Company or the Company's shareholders. Hence, Constellation will have the ability to influence certain actions that may not reflect Canopy's intent or the best interests or the Company or its shareholders. The presence of Constellation could limit the price that investors or an acquirer may be willing to pay for common shares and may therefore, delay or prevent a change of control or take-over bid of Canopy Growth. Pursuant to the Second Amended Investor Rights Agreement, Constellation also has certain consent rights which could delay or prevent the completion of certain transactions that may otherwise be beneficial to the Company's shareholders.

As a result, the Company may be dependent on Constellation, which could have a material adverse effect on the Company's business, financial condition and results of operations.

This influence can be even greater in case Constellation exercises its potential warrants, where its ownership could push above 50% and Canopy Growth would receive an additional C$5.5 billion or more.

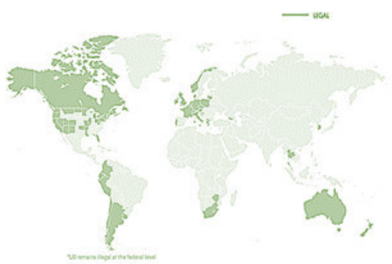
Within insider shareholders, the director Murray Goldman has the highest percentage of shares, approximately 1.1%, followed by Bruce Linton, that despite being fired by the company in 2019, recently bought shares and now owns 0.75% of the Company, showing the confidence the ex-CEO has in the company.

Other significant shareholders include the Vanguard Group, Morgan Stanley Canada, Horizons ETFs Management, each owning around 1% of the common shares.

The Sector

Even though the cannabis industry has been growing exponentially for the past few years, the slow regulatory processes and the noncompetitive prices of legal sources have prevented it from diluting the black market. In fact, as the cannabis industry is growing, the black market seems to be growing as well.

Exhibit 9: Legal Medical Cannabis



Source:
Prohibition Partners : "The Truth Behind the Global Cannabis Industry Slump"

According to the Barclays' European Consumer Report[8] and the United Nations[9], the global cannabis market size, which is comprised of both the legal and black market, is estimated to be worth US $150 billion and is expected to increase to US $272 billion by 2028. Accounting for the US only, the black market for cannabis totals, approximately, US $70 billion. Hence, the estimated global legal market, valued at US $13,8 billion in 2018[10], with an expected CAGR of 30-35%[11], is expected to be valued between US $87 and US $113 million in 2025.

The main reason the black market still exists in countries where cannabis is legal has to do with price discrepancies. Illegal sellers have advantages in comparison to regulated companies given that they do not pay taxes or have to comply with regulatory requirements such as packaging and quality-control standards. As a result, marijuana prices on the black market can be well below legal prices, which along with the scarcity of licensed stores and the long process to obtain licenses, explains why one year after Canada legalized weed, 42% of people who consume the substance, still get cannabis from illegal sources[12].

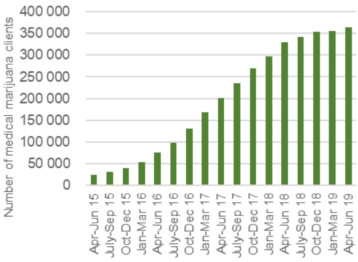
[8] 420 Investor Daily. 2019. "Cannabis: Legal Market versus Black Market". https://420investordaily.com/2019/12/05/cannabis-legal-market-versus-black-market/
[9] Todd Campbell. 2019. "The Marijuana Industry: Everything you need to know". https://www.fool.com/investing/marijuana-industry-investing-what-need-to-know.aspx
[10] Gran View Research, 2019. "Legal Marijuana Market Size, Share & Trend Analysis Report". https://www.grandviewresearch.com/industry-analysis/legal-marijuana-market
[11] Fortune Business Insights. 2019. "Cannabis/Marijuana Size, Share and Industry Analysis". https://www.fortunebusinessinsights.com/industry-reports/cannabis-marijuana-market-100219
[12] Statistics Canada. 2019.

The average price per gram for legal marijuana in Canada dropped from C$10.64 to $10.23, whereas on the black market, the average price dropped from C$5.9 to $5.59. Even though prices have been decreasing on both markets, illegal marijuana is 45% cheaper[13].

Medical Segment

Medical marijuana uses the cannabis plant or chemicals in it to treat diseases or conditions. There is still a lot of research being done to understand cannabis properties and how they can help for medical purposes. The greatest amount of evidence for the therapeutic effects of cannabis relate to its ability to reduce chronic pain, nausea and vomiting due to chemotherapy. Part of its allure is that it is safer than opiates and far less addictive.

Exhibit 10: Medical Marijuana Clients registered in Canada



Source: Statista

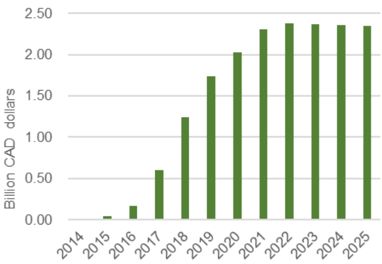
In 2018, the global medical marijuana market solely was worth approximately US $13 billion and it is expected to grow at a CAGR of 23%, resulting in a market value of, approximately, US $44 billion by 2024[14].

▪ Canadian Market

According to Statista, the estimated total market size of medical marijuana in Canada in 2019 was C$1.7 billion and is expected to reach C$2.4 billion in 2025.

According to Health Canada, in June 2019 there were 363,917 medical client registrations with federally licensed sellers, which represents an increase of 10% compared to the homologous year. Although there is a growth slowdown in the last couple of years, Health Canada estimated the market will eventually grow to 450,000 people by 2024.

Exhibit 11: Canadian Medical Cannabis Size



Source: Statista

As at March 31, 2019, there were approximately 73,600 registered Canadian patients with Spectrum Therapeutics, down from approximately 83,400 patients at December 31, 2018. The decrease is largely attributable to the partial cannibalization caused by the introduction of the Canadian recreational market.

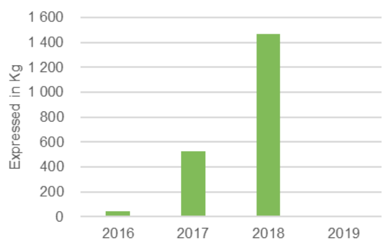
As reported by the 2018 Canada Marijuana Delivery Pricing Guide[15], the price per gram for medical marijuana in Canada from illegal sources was, on average, C$8.18, whilst the price per gram from licensed marijuana in dispensaries could cost around C$9.12.

[13] Marijuana Business Daily. 2019. "Price gap grows in Canada between legal, illicit cannabis". https://mjbizdaily.com/price-gap-grows-in-canada-between-legal-illicit-cannabis/
[14] IMARC Group. 2019. "Medical Cannabis Market." https://www.imarcgroup.com/medical-cannabis-market
[15] Weed Smart. 2018. "Canada Marijuana Delivery Pricing Guide!". https://weedsmart.ca/pricing-guide-canada-marijuana-delivery/

International Market

Currently, more than 30 countries around the world have legalized the therapeutic use of cannabis extracts and it is estimated that at least a dozen more will do so in the coming years.

Exhibit 12: Canadian Dried Cannabis Exports



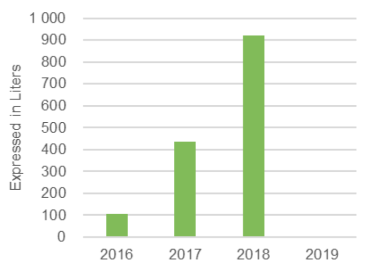
Source: Health Canada

While there are 37 million people in Canada and 327 million in the United States, the European Union is home to almost 743 million citizens, constituting a potential big market for the industry, estimated to be €123 billion by 2028 from which €58 billion derive from the medical segment[16].

Countries with newly legalized medical markets generally rely on imports to meet demand as they develop cultivation capacity and establish regulatory structures. The overall medical cannabis exports likely rank Canada third in global exports, behind the United Kingdom, home to Sativex-maker GW Pharmaceuticals, and the Netherlands, home to Bedrocan, which is authorized to export 1,500 kilograms of medical cannabis to Germany annually.

In Canada, exports of dried cannabis tripled to 1,460 kilograms in 2018, compared with 500 kilograms in 2017 and only 44 kilograms in 2016. Exports of medical cannabis oil, doubled to 920 liters, compared with 430 liters in 2017 and 100 liters in 2016.

Exhibit 13: Canadian Cannabis Oil Exports



Source: Health Canada

Recreational Segment

In the year following the legalization of recreational marijuana in Canada, the cannabis retail market has grown considerably, with legal retailers establishing more than 400 brick-and-mortar stores and generating $908 million in online and retail store sales[17]. According to The Canada Cannabis Report: 2019 Industry Update and Outlook[18], the medical marijuana market in Canada is expected to reach C$ 5,2 billion by 2024, with an estimated CAGR of 22.5% between 2019 and 2024.

In the first months of legalization, Cannabis generated C$186 million in tax revenue in Canada. Under Canada's legalization framework, the federal government receives 25% of the excise tax revenue, with the remaining amount going to the province where any given sale occurs. Statistics Canada also noted that general goods and services taxes on cannabis ranged between 5% and 15%,

[16] Health Europa. 2019. "Will Europe be the world's largest medical cannabis market?" https://www.healtheuropa.eu/medical-cannabis-market/90033/
[17] Statistics Canada. 2019. "The retail cannabis market in Canada: A portrait of the first year." https://www150.statcan.gc.ca/n1/daily-quotidien/191211/dq191211b-eng.htm
[18] New Frontier Data. 2019. "The Canada Cannabis Report: 2019 Industry Update and Outlook". https://newfrontierdata.com/product/2019-canada-cannabis-report/

depending on the region. Nevertheless, those against cannabis legalization argue that it can be a gateway for more heavy and addictive drugs.

The following countries are expected to legalize recreational marijuana in the upcoming years[19]: Mexico and New Zealand (2020); Australia, Luxembourg, Spain, Belgium, Portugal and the remaining states in the US (2023); Italy (2024); Holland, Germany, Colombia, Argentina, Peru, Ecuador and Chile (2025); France, Jamaica, Cuba, Barbados and South Africa (2026); Sierra Leone, Ghana, Zimbabwe and Lesotho (2027); Norway, Venezuela and Thailand (2029).

In terms of pricing, due to taxes, recreational marijuana tends to be more expensive than medical marijuana. In the US, for example, in states where cannabis is legal, the tax on marijuana for medical patients is far lower than the tax rate for recreational consumers. The difference often ranges between 10% and 30%, and according to *2018 Canada Marijuana Delivery Pricing Guide*, the price per gram for illegal recreational marijuana was C$7.42, and licensed marijuana in dispensaries, could cost around C$9.12.

In the end, the legal market will never be able to fully capture the black market unless prices become competitive. However, with government taxes from sales of cannabis and the strict regulations on growth and sale of the substance, it is highly unlikely to happen, at least, in the upcoming years.

- Cannabis 2.0

Cannabis 2.0 refers to the Cannabis derivative products such as edibles, infused beverages, vapes, topicals and concentrates. Typically named "derivatives", these products come with significantly higher margins than dried marijuana flower.

The global market value for the CBD-infused edibles in 2017 reached, approximately, US $1 billion. However, by 2022, this market is already expected to be worth at US $4.1 billion, with an implicit CAGR of, approximately, 32.6%[20].

In terms of prices, it varies depending on the category and the amount of CBD and THC. For instance, a chocolate bar containing 300mg of THC could be found for $15 whereas a chocolate cookie with 50mg can be bought for $7[21].

[19] VICE. 2019. "These are the Countries Most Likely to Legalize Weed Next". https://www.vice.com/en_us/article/gy4pa7/these-are-the-countries-most-likely-to-legalize-weed-next
[20] PRNewswire. 2019. "Strong Demand for CBD Edibles to Create a $4.1 Billion Market by 2022" https://www.prnewswire.com/news-releases/strong-demand-for-cbd-edibles-to-create-a-4-1-billion-market-by-2022--300890266.html
[21] Weedsmarte. 2019. "pricing guide Canada marijuana". https://weedsmart.ca/pricing-guide-canada-marijuana-delivery/

Competition

Main Competitors

Competition is fierce in the cannabis industry and the emerging recreational segment and increasing legalization of Cannabis worldwide is driving the market. Hence, although Canopy Growth is considered the world's largest cannabis company, it faces intense competition in the sector: Aurora Cannabis, Aphria Inc., Tilray and The Cronos Group.

Table 1: Main Competitors in the Industry

Companies	Market Cap.	2019 Net Revenue	2019 EBITDA	Cannabis Kg Sold	Gross Margin*	Nº Countries Present
CANOPY GROWTH	C$8,9 B	C$226 M	- C$259 M	24,360	22%	15
AURORA	C$2,9 B	C$248 M	- C$156 M	33,361	58%	25
aphria	C$1,6 B	C$237 M	C$17,5 M	13,398	32%	10

Source: Companies Annual Reports

*Cannabis gross profit, cannabis gross margin, distribution gross profit and distribution gross margin are non-GAAP financial measures that do not have any standardized meaning prescribed by IFRS and may not be comparable to similar measures presented by other companies. Due to technical difficulties in Tilray's website, it was not possible to gather information on the company. Cronos Group still has not presented its annual results for 2019, therefore we could not compare information.

Nevertheless, due to price discrepancies and supply constraints, the biggest rival that Canopy Growth faces is the Black Market.

Licensed marijuana producers are still taking some sales away from the black market since the legalization of recreational use has converted some costumers to more reliable and better-quality products that regulated companies can provide. Also, the production capacity for the major marijuana growers is increasing and therefore there will be enough production to meet the demand.

SWOT Analysis

In order to further analyse Canopy Growth competitive environment, a SWOT Analysis was designed to assess the potential gaps between the external opportunities and threats and the internal strengths and weaknesses of the company business model, also serving as an indicator for the future prospect.

Strengths

- **Size:** With over 4.8 million square feet of indoor and greenhouse production capacity, in 2019 Canopy harvested 46,927 kilograms of cannabis, allowing the firm to achieve significant economies of scale and to be one of the least cost producers in the space. Canopy is only exceeded by Aurora Cannabis, which has ramped up its production capabilities over the past year, producing 57,442 kilograms.

- **Vertically integrated:** Operations from genetic diversification all the way to the production of cannabis derived consumer staples, allowing them to control the entire production chain and to offer higher margin, value added products.
- **Cannabis best-established brands**: Tweed has positioned itself as one of the most recognisable brands in the cannabis market, trying to transcend the pharmaceutical market to establish itself as a lifestyle brand.
- **Strategic partnerships:** Canopy has been able to foster important relationships with public figures such as the rapper Snoop Dogg, through his business Merry Jane, a cannabis lifestyle company and information network. These initiatives drive Canopy's brand image, which can hopefully increase consumer engagement and build fidelity.
- **Strong R&D portfolio**: C$154 million registered in Intellectual property, with 130 issued patents and over 300 patent applications. In comparison, Aurora Cannabis had 101 patent applications. The Canadian patent database, administered by the Canadian Intellectual Property Office, yielded 345 patent applications related to the search term "cannabis" in 2018.q

Weaknesses

- **Significant dilution of original shareholders**: The large-scale funding rounds proportionated an extremely fast growth in expense of early investors who get their investments diluted. In total, Canopy has issued nearly C$1 billion in equity.
- **Rely heavily on share-based compensation:** Share-based compensation expense was $182,837 in fiscal 2019, as compared to $29,631 in fiscal 2018. The year-over-year increase of $153,206 is mainly attributable to the continued increase in the number of stock options granted, which is primarily attributable to the increase in the number of employees of the Company, from approximately 1,000 at March 31, 2018 to approximately 3,200 at March 31, 2019. 12.8 million stock options were granted in fiscal 2018, as compared to 22.1 million in fiscal 2019. Even though this does not represent actual cash-based expenditures, it does present a clear signal to the market that Management is perhaps over compensated or too focused on paying themselves out versus ensuring the success of the firm. However, this strategy is a way to have everybody aligned, working hard, and wanting to make the company successful.

Opportunities

- **Continuous growth through organic sales and acquisitions:** Smaller producers will have a harder time competing at scale with Canopy, making them easy targets for corporate takeovers. This is coupled with low interest rates in the Canada, which means that there is both an abundance of cheap capital and opportunities for consolidation;
- **New markets:** Its position and recognition worldwide means that, should new markets open to the recreational cannabis sector, Canopy's expertise should give it a clear advantage in the international market.

Threats

- **High Taxes:** Higher taxes increases prices and makes legal business less competitive in relation to the black market.
- **Regulatory Agency Health Canada as a main source of supply problems:** In January 2019, the agency tasked with reviewing and approving or denying cultivation, processing, distribution, and sales license applications, was working with a backlog of more than 800 applications[22].
- **Intense M&A environment**: Canopy's largest competitors continue to grow organically but most importantly through acquisitions. There is an inherent risk of take-overs in the market.
- **International regulation ambiguity**: Restricted shareholder pool as institutional investors shy away from the sector.
- **Commoditization risks/low product differentiation steaming from plain product packaging regulations**: Consumers are highly influenced by price.

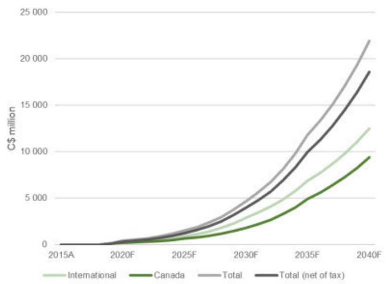
Forecasting

Income Statement

Since the legal cannabis industry is a recent, emerging industry, the forecasted years had to be extended in order to produce a proper forecasting. Hence, instead of doing a typical 10-year forecast, we will be doing a 20-year forecast and assume a growth rate for the FCF in perpetuity. For the following analysis, please refer to *table 1* (in appendix), which represents the following analysed items in the forecasted Income Statement.

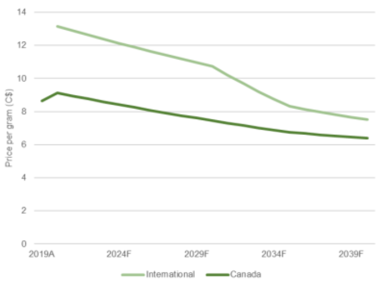
[22] https://www.fool.com/investing/2019/06/26/health-canada-just-failed-the-marijuana-industry-a.aspx

Exhibit 14: Recreational revenues by segment (historical and forecasted)



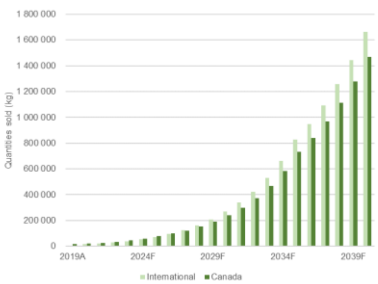
Source: Company Report and our estimates

Exhibit 15: Price of recreational marijuana (historical and forecasted)



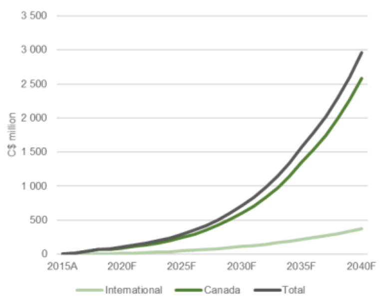
Source: Company Report and our estimates

Exhibit 16: Quant. sold of recreational marijuana (historical and forecasted)



Source: Company Report and our estimates

Exhibit 17: Medical revenues by segment (historical and forecasted)



Source: Company Report and our estimates

- Revenues

In order to forecast the revenues of the company, we used a bottom-up approach, i.e. the value drivers were price (per gram) x quantity (in kilograms). To simplify the forecast and make it more accurate, we distinguished revenues between segments, from medical revenues to recreational revenues and, from international sales to Canada sales.

Recreational Revenues

The trickiest forecast is for recreational revenues, since it is a relatively new market. The company only had recreational sales in 2019 and only in Canada, since most countries have not legalized marijuana for recreational purposes. According to the market analysis done previously, we know that revenues are expected to increase at a relatively high CAGR, close to 30-35%.

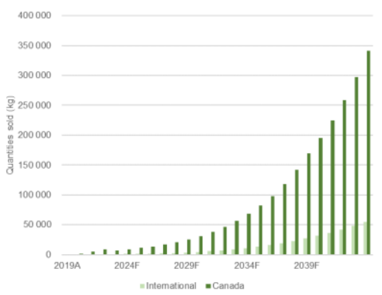
Considering Canada sales, we expect quantities sold to increase by 30%, decreasing around 5% every 5-6 years. This would lead to a quantity sold of almost 1.5 million kg in 2040, in opposition to 16 thousand kg in 2019. In terms of pricing, in 2019, the average price for licensed marijuana sold in dispensaries in Canada was, around, C$9.12. Therefore, we used this value as a starting point for prices in the upcoming year (2020). Nonetheless, since the black-market price for marijuana was around C$7.42, the price is expected to drop to a value closer to that one (in order for it to be competitive). Hence, we assume a decrease in prices of 2% for 15 years and 1% for the remaining 5 years forecasted, obtaining a price of C$7.45 in 2030 and C$6.41 by 2040, when we expect it to stabilize. Overall, Canada sales of recreational marijuana are forecasted at C$9.41 billion in 2040, versus C$140.5 thousand in 2019.

The quantities of recreational marijuana sold internationally are expected to increase by 35% for the next 5 years, eventually stabilizing at a CAGR of 15% in the last 5 years of the forecast. Sales are expected to begin in the next fiscal year, 2020 since other adult-use products, such as their “First and Free” line are already being sold in the US, in the states where recreational marijuana is legal. This would result in sales of C$12.47 billion by 2040.

Medical Revenues

In Canada, quantities sold of medical marijuana have decreased, mostly due to the high prices of marijuana in the legal dispensaries (in opposition to the black market). For this segment, we still believe that when the company obtains more licenses for production facilities, quantities sold will still increase. Therefore, we assumed an initial growth of 23% (based on industry growth for the medical segment), which eventually decreases to 10% in the last forecasted years. In terms prices, since we have found that the average price for medical marijuana in Canada was C$10.23, we use it as a starting point. However, we assume a decrease of 1% in the first 5 years and 2% the following 10 years. In 2040, the price is expected to be $7.56, closer to black market prices. Overall, sales are expected to increase from C$68.8 million in 2019 to C$2.6 billion in 2040.

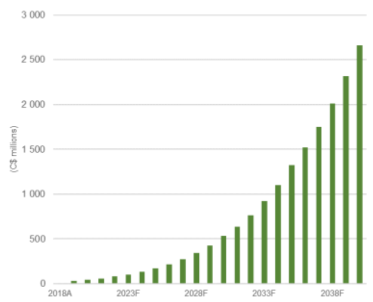
Exhibit 19: Quant. sold of medical marijuana (historical and forecasted)



Source: Company Report and our estimates

International sales, on the other hand, are expected to grow at a higher rate, as the market is not as established as in Canada and there is still potential growth arising from legalization in other countries. Therefore, we assume a CAGR closer to that of the recreational segment, 30%. Eventually, the expected growth decreases to 10% in the last forecasted years. In terms of pricing, even though in 2019 prices are higher for medical marijuana (C$14.74 in 2019), by 2040, it is expected to become cheaper than recreational marijuana since sales tax on the latter tend to be higher than on medical marijuana. Hence, a 2% decrease is expected for the next 5 years, followed by a 5% decrease in the 10 years after. By 2040, the price is expected to be close to C$6.85, which is more in line with black market prices (still considering the excise tax on these products). In that sense, total medical revenues, which amounted to C$78.9 million in 2019, are expected to become close to C$3 billion by 2040.

Exhibit 20: Other revenue (historical and forecasted)



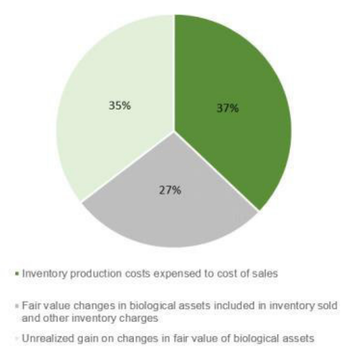
Source: Company Report and our estimates

Excise taxes

When the company started selling marijuana for recreational purposes, government implemented a tax on those sales, which was, approximately, 19%. The average excise tax in the US, based on the excise taxes of the states where it is legal is 18%[23]. Based on this information and considering that the typical tax on these sorts of products (tobacco, alcohol) is close to 15%, we assumed a tax rate of 18% for the upcoming years, eventually decreasing to 15% in the long-run.

Other Revenue

Exhibit 21: COGS segmentation in 2019



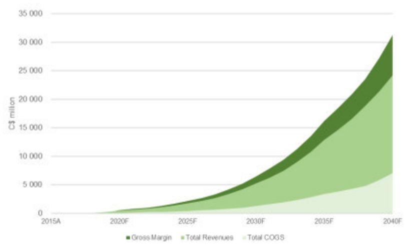
Source: Company Report

This segment of the Income Statement comprises other CBD-infused products, besides dry buds and oils. As previously mentioned, the potential of the sector is huge, since it is an industry in the beginning of its form, and, therefore, the potential CAGR in the upcoming years is, approximately, 33%. With the launch of its CBD-infused products line, "First & Free" (now available in the United States) and C$5 billion investment of Constellation Brands, this segment "Other Revenue" is expected to grow close to industry values. Therefore, we assumed 33% growth in the upcoming years, which slowly decreases in the future, stabilizing in 2040 to 15% growth. The initial revenue of almost C$35 million in 2019 is expected to hit C$2.67 billion by 2040.

[23] Medical Marijuana Inc., *Marijuana Prices and Sizes*, October 9, 2019

Overall, there is a substantial increase in revenues (from C$226 million in 2019 to C$24 billion in 2040) due to the high potential and growth of the industry.

Exhibit 22: COGS and Gross Margin (historical and forecasted)

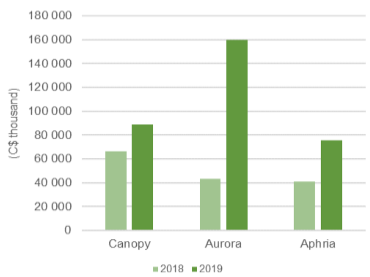


Source: Company Report and our Estimates

- Cost of Goods Sold

In the Income Statement of the company, there is one important variable cost that is accounted for prior to operating expenses, inventory production costs expensed to cost of sales. We measured these costs as a percentage of total net revenues. Apart from the recurring costs of recreational and medical marijuana sold, there was a major increase in these costs in fiscal year 2019 (from C$40 million to C$175 million) due to the operating costs of facilities that had unutilized capacity. Therefore, in the subsequent years, Canopy Growth should be able to reduce these costs through the usage of greenhouses to full capacity. While in 2017, these costs represented only 38% of revenues, this value increased to 78% in 2019. We assume a decrease of 5% for the upcoming years, eventually reaching 8% by 2040, with an ending weight of 19% of total revenues.

Exhibit 23: Gross Margins of Cannabis companies

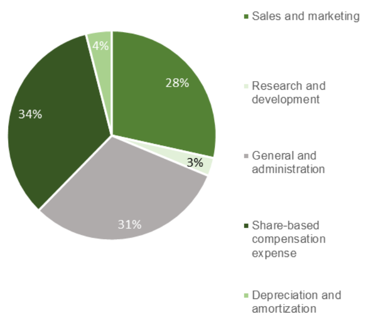


Source: Companies Reports

- Operating Expenses

The majority of costs associated with operations are fixed costs. Therefore, it did not make sense for us to use revenues as the driver for their potential growth. Hence, to different costs we attributed different value drivers, depending on their nature. A great part of the operating expenses is employees' compensation. In March 31, 2019, employee compensation and benefits were $158,161 (for the year ended March 31, 2018 – $49,971), without even considering share-based compensation expenses. Meaning that, around 50% of sales and marketing, research and development and general and administration expenses were comprised of employees' compensation. Therefore, it made sense for us to use the *#employees x compensation per employee* as the drivers for these three captions in the Income Statement. Notice that, not all costs are associated with employees, we simply found it to be the most appropriate driver.

Exhibit 24: Relevant Operating Expenses segmentation on March 31, 2019



Source: Companies Reports

<u>Sales and marketing</u>

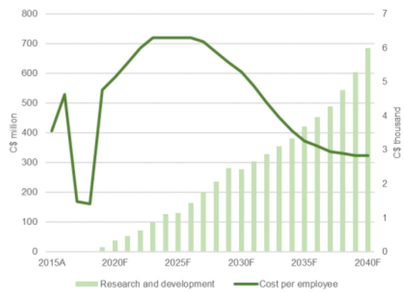
Sales and marketing are sizeable costs for the company. There was an increase in these expenses in 2019 (from C$38 million to C$154 million) due to strong investments made by the company on their marketing and promotional campaigns, mostly focused on brands Tweed and Tokyo Smoke. Canopy Growth has been betting on marketing and other promotion in anticipation their entrance in the recreational market (particularly in Canada). The major cost of the caption was related to staffing in marketing and sales functions, which was required to service the regulated recreational and international markets. Other expenses included a customer care centre, cannabis retail and education programs and a

Exhibit 25: Sales and marketing expenses (historical and forecasted)

Source: Company Report and our estimates medical outreach program. With the acquisition of C³ in May 2019 (which already has a robust sales and marketing organization) and the continuous bet on promoting recreational marijuana consumption as well as providing these additional services, we believe the cost per employee will slightly decrease in comparison with the last year. Therefore, we assumed a cost of C$35k per employee which we decreased by C$5k every five years. This implies an initial forecasted value of C$255 million for 2020 (C$35k per employee) and an ending value of C$4.83 billion for 2040 (C$20k per employee).

Research and development

Exhibit 26: R&D expenses (historical and forecasted)



Source: Company Report and our estimates

R&D, when compared to other operating expenses, is relatively small (C$15 million in 2019). According to the fiscal year 2019 financial report of the company, it will continue to invest in hiring advanced degree researchers and engineers, in areas of vapers' R&D, plant genetics, cannabis-based medical therapy clinical research. Therefore, it will also incur in higher compensation costs associated with the teams conducting R&D, product and system development and testing. Not only do pharmaceutical companies tend to have high R&D costs, but it is also crucial in such an early stage of the cannabis industry for companies to gain any sort of competitive advantage over their peers, by developing more advanced, target-oriented products. Hence, we assume the cost per employee will increase in the upcoming years (due to these investments), from $5k per employee to $7k. However, it will be slowly decreasing in the long run, to a value of $3k per employee as the industry matures, and the developed products already satisfy customers' needs and expectations. Overall, the initial value of C$15 million in 2019 is expected to increase to an ending forecasted value of C$684 million)

General and administrative

Exhibit 27: General and administrative expenses (historical and forecasted)

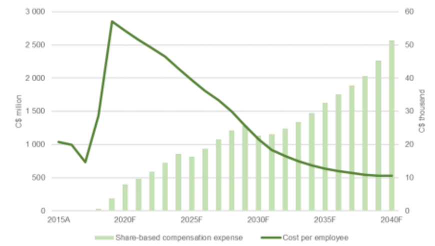
Source: Company Report and our estimates

General and administrative is the second largest operating cost of the company. In fiscal year 2019, the company incurred in compliance costs regarding its listings on the TSX and NYSE (extraordinary costs), services fees and other costs regarding the international expansion of and costs with personnel. As the international market is currently still in expansion with the legalization of medical and recreational marijuana in other countries (particularly in the United States and Europe), the company is expected to continue to incur in costs regarding the expansion of its operations in the upcoming years. Nonetheless, in the long run, we believe these costs will decrease since the company will slowly get more established in the market. Hence, the initial value of C$168 million (C$53k per employee) is expected to increase to C$6.377 billion (C$28k per employee).

Share-based compensation expense

Compensation based on shares is the most relevant cost for the company. There has been an increase in this expense mostly due to: a continuous increase in the number of stock options granted; an increase in stock price and the *Omnibus Incentive Plan* (i.e. type of equity incentive plan where the company has flexibility to grant any type of award out of the plan). Linton (former co-CEO) believed that the best way to install loyalty in his rapidly growing employee base was to provide them with long-term-vesting stock. However, with the growth in the number of employees, there is more damage due to share-based compensation. Therefore, and since the company is far from being profitable, we believe that, in the long hall, there will be a decrease in the compensation per employee in shares as it is the only way to decrease such a huge expense. The forecasting value goes from C$57k per employee in 2019 (C$183 million) to C$11k in 2040 (C$2.57 billion).

Exhibit 28: Share-based compensation expense (historical and forecasted)



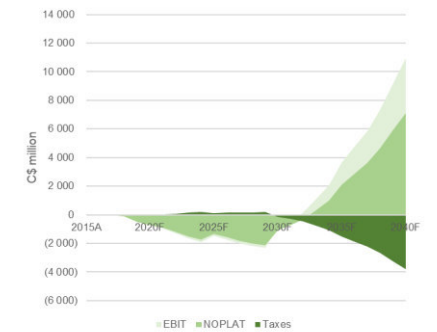
Source: Company Report and our estimates

Overall, the expected increase in revenues and decrease in costs as the industry expands, leads to an increase in EBIT value. While, in 2019, EBIT had a negative value (-C$520 million) and the EBIT margin was -230%, in 2040, these values are expected to revert to positive ones (C$10.93 billion and 45%, respectively).

- Taxes

The statutory tax rate in Canada is, and has been for the past years analysed, 26.5%. However, the total amount of taxes charged in every year is higher than the established due to "Tax Adjustments". The majority of tax adjustments are non-recurring, and therefore the forecasting value is zero. However, tax adjustments on non-deductible expenses are expected to be recurring since, usually, share-based compensation expenses are non-deductible for taxes purposes, particularly when regarding incentives to personnel. Given that the company comprises two share-based compensation expenses' captions in the operating expenses, we felt it made more sense to use them as a proxy to estimate these taxes, rather than total operating expenses. Hence, in the forecasting years, we decided to use the past years' average percentage (32.5%) and applied it to the future. The value of this tax adjustments is expected to increase from C$99 million in 2019 to C$833 million in 2040).

Exhibit 29: EBIT, Taxes and NOPLAT (historical and forecasted)



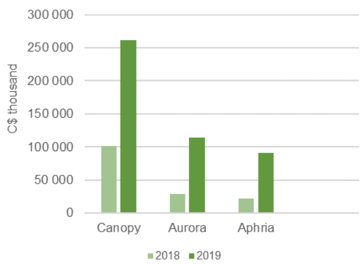
Source: Company Report and our Estimates

The resulting NOPLAT from the deduction of taxes in the EBIT values are expected to be positive only from 2033 onwards. As mentioned previously, the company has very high costs and insufficient revenues to cover them, since the market is still very restrict internationally. Only when new markets emerge (cannabis is legalized in more countries) and costs decrease (with economies of scale) will the company be able to produce a positive net income.

Exhibit 30: Free Cash Flow (historical and forecasted)

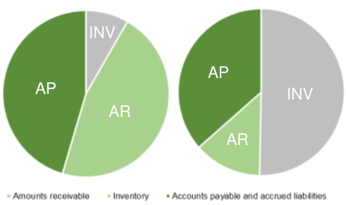
Source: Company Report and our estimates

Exhibit 31: Inventory levels per company



Source: Companies Reports

Exhibit 32: Working capital composition in 2019 vs 2040



Source: Company Report and our Estimates

Free Cash Flow

Having established NOPLAT, we can now calculate Free Cash Flow from operations. The following forecasted items required for the calculation are represented in *table 2* (in appendix) and the resulting FCF after the forecasting will be presented in *table 3* (in appendix).

- Net Working Capital

Inventory

Inventory is a very large asset for Canopy Growth. This is very common in the cannabis industry. As shown in exhibit 31, comparables of Canopy, such as Aphria and Aurora also suffered large increases in their inventory levels, even if less than Canopy. According to an article on the Motley Fool[24], the large inventories can be explained by the lag of sales growth when comparing to the increase in production; the delay of Health Canada in providing licenses to retail dispensaries, which limits the access to legal cannabis; and the high excise taxes. The preceding two reasons push consumers away from the legal market and encourage purchases on the black market.

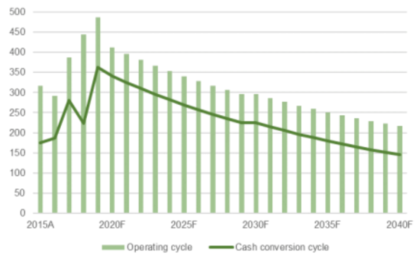
With the new line "First and Free" Canopy launched and the potential expansion of medical and recreational marijuana sales to international markets, we believe inventory values will slowly decrease, in percentage of operations' size. To forecast this caption, we used the holding period as a driver for inventory value and we assumed a decrease of 5% per year in that period. Moreover, since the cannabis' expected life cycle is approximately 90 days, it can be harvested between 3 to 4 times a year. The higher the harvest frequency, the more justifiable it is having lower relative inventory levels. Overall, the holding period is expected to decrease from 314 days in 2019 to 118 in 2040.

Accounts Receivable

In this industry, and particularly with Canopy Growth, most transactions related to medical sales are done using credit cards (amounts receivable is not expected to decrease a lot). Recreational sales are done through Canadian/territorial agencies, which have low credit risk, assuring the company the payment of their products. Therefore, the company is not expected to demand earlier payments. Hence, for this caption we took the average collection period (98 days) from past years and forecasted it to the future, as there is no reason to assume differences.

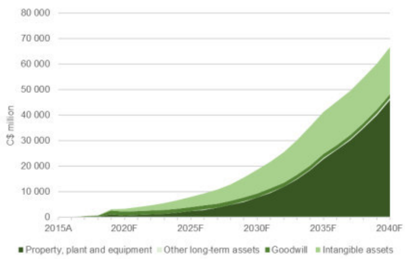
[24] The Motley Fool, *This One Chart Shows Why You Should Avoid Canadian Cannabis Stocks Like the Plague*, October 2019

Exhibit 33: Cash conversion and Operating cycles (historical and forecasted)



Source: Company Report and our Estimates

Exhibit 34: CAPEX composition (historical and forecasted)



Source: Company Report and our Estimates

Accounts Payable and Accrued Liabilities

Accounts payable and accrued liabilities was mostly comprised of amounts of property, plant and equipment; professional fees; compensation-related liabilities and other miscellaneous liabilities. To calculate the average payable period, we used the pharmaceutical industry benchmark (71 days) as proxy for future years.

These results considered lead do an ending cash conversion cycle of 145 days and an operating cycle of 216 days.

- ### Capital Expenditures

PP&E

In order to forecast PP&E, we first looked at the current facilities owned by Canopy Growth in order to conduct its operations. Afterwards, we have calculated the average kilograms produced per square-foot, so that we could get the square-feet required to produce the quantities sold. Then, we were required to multiply the average PP&E in C$ thousand per square-foot, to get the total amount.

Goodwill

As mentioned previously, the increase in goodwill is attributable to Canopy's strong M&A activity and their preference for acquiring targets with strong brands.

Canopy Growth intends to continue with these acquisitions (plan to acquire leading multi-state operator Acreage Holdings, Inc). Since it is fairly difficult to forecast either: 1) future goodwill impairments or 2) future acquisitions where the company pays in excess of book value for the assets acquired; we assumed the last value (C$1.54 billion) as constant forever.

Intangible Assets

Licenses are a major part of the business, as the company needs them to be able to cultivate cannabis. Moreover, patents are very important in the industry also since they give the company comparative advantages, putting them ahead of their peers. However, it is more of an up-front investment, since the company obtains these licenses now and in the upcoming years. Therefore, in the long run, this value will be lower.

Valuation

Discounted Cash Flows (DCF)

Exhibit 35: 3-year Rolling beta of Canopy

Source: Bloomberg and our Estimates

Exhibit 36: ROIC and RONIC (historical and forecasted)

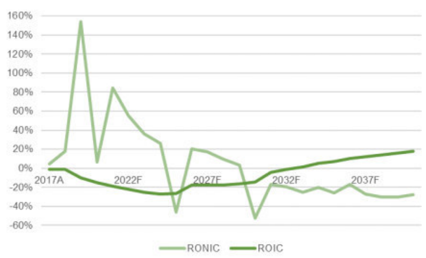
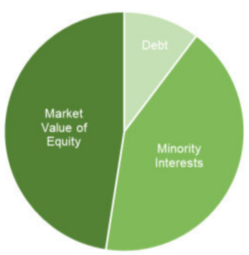


Exhibit 37: Enterprise Value composition



Source: Company Report and our Estimates

Discount Rate

In order to discount the cash flows of the company, we used WACC (weighted average cost of capital). By doing so, we are assuming the capital structure of our company will hold until perpetuity, i.e. the Debt-to-Equity ratio will remain constant. The first input was Beta, which we calculated through a regression where the independent variable is the market risk premium (MRP) and the dependent variable is the company's stock's excess return. The market risk premium resulted from the difference between the S&P500 returns (the majority of shareholders of the company are American) and, consequently, the US Government 10-year bond. The resulting beta from the regression was 0.97, with a 95% confidence interval between 0.72 and 1.22. To calculate the beta, we used daily observations from the last 5.5 years (from 08/04/2014 until 15/11/2019). From the CAPM equation, considering the beta calculated, the MRP and the Canadian Government 10-year bond, we obtained a cost of equity (r_e) of 6.41%. Considering a cost of debt (r_d) of 5.85%, obtained from the average YTM of the company's current debt obligations, a Debt/EV of 0.17 and an Equity/EV of 0.83, we attain a WACC of 6.05%. The tax rate used was 26.5% (statutory tax rate).

Growth Rate

The growth rate used was 3.6%, which was calculated based on the expected long-term inflation rate (approximately, 2.15%) and the expected real growth of the industry (around 1.4%). The legal cannabis industry is at a very initial stage and it will capture almost entirely the illegal market, meaning that it will still have positive real growth past the last forecasted year.

Enterprise Value and Share Price

Upon finding the terminal value of the company, using the growth rate and WACC calculated, and discounting the FCF we obtain an Enterprise Value (EV) of C$16.62 billion. After deducting debt of, approximately C$1.86 billion and minority interests of C$7.01 billion (42%), the resulting Equity Value was close to C$7.75 billion. With, approximately, 267 million shares outstanding, the share price of the stock obtained was C$29.02. Hence, based on out model, our recommendation for institutional and individual investors is to hold the stock, since the current share price (22/12/2019) is C$27.31, which yields a return of, approximately, 6%. The company has growth potential in the future, however, at the moment, it is still unable to provide high returns to investors.

Sensitivity Analysis

Exhibit 38: Sensitivity Analysis

		WACC				
	C $29.02	5.45%	5.75%	6.05%	6.35%	6.65%
Growth Rate	3.0%	37	23	12	3	-4
	3.3%	51	33	20	9	1
	3.6%	68	46	29	16	7
	3.9%	93	63	41	25	13
	4.2%	130	86	57	37	22

Source: Our Estimates

In order to understand the impact of alterations in growth and WACC values on the share price, we decided to conduct a sensitivity analysis. As it is visible in exhibit 38, the share price can range from negative to C$130. In the case of negative share prices, the company would go bankrupt and, therefore, its value would be zero. Overall, the share price is more volatile with WACC than with growth, i.e. changes in WACC will be more impactful on the share price. At the current WACC (6.05%) and expected growth rate (3.6%), we still recommend investors to hold it. However, if the growth rate falls too beneath the expected or WACC increases, the recommendation could turn to "sell".

Relative Valuation Approach

A second approach used to value the company was the relative valuation, or Multiples approach. The comparables used in the calculation of the multiples were: Canopy Growth Corporation; Aurora Cannabis; Aphria; Tilray and Cronos Group (all quoted on the NYSE). The average and median multiples obtained are showed in exhibit 39 and, when applied to Canopy's Growth data estimate an Enterprise Value range of $5.33 billion to $25.22 billion. The average value for the EV of the company was, therefore, estimated to be $16.13 billion, which, converted to Canadian dollars at the current exchange rate 1:1.3 (31/Dec/2019) totals C$20.96 billion. Deducting previously mentioned debt values and minority interests, we obtain an expected share price of C$42, approximately, C$13 above the share price estimated using the DCF method.

Exhibit 39: Multiples Analysis

(in million $)	Multiple Range		EV Range	
EV/Sales	76.3x	42.2x	17 273	9 559
EV/EBITDA	-61.0x	-103.5x	14 509	24 637
EV/EBIT	-79.4x	-94.9x	21 098	25 216
P/Sales	0.2x	0.1x	11 365	5 329

Source: Our Estimates

Risks & Uncertainties

The company's valuation is subject to the uncertainty regarding future legislation of recreational and medical marijuana in other countries. The lack of adherence from governments to changes concerning marijuana laws may lead to a lower growth of quantities sold by the company and, therefore, compress revenues. The amount allocated to certain acquisitions beyond the value of their physical assets is also a risk and the companies not able to recover the value of goodwill by developing its acquired assets and monetizing its purchased patents might expect a big write down. Alongside goodwill, there is the risk of oversupplying the market due to intense competition, leading to large accumulated inventories and major losses due to product waste (expired products). Moreover, the intense competition, combined with the taxation on marijuana products may lead to compressed margins, as the company may not be able to decrease prices and make them competitive with the black market. With international expansion, emerges another risk for the company's cash flows: foreign exchange risk. Due to fluctuation in exchange rates and the large operations expected for the international market, the company might suffer erosions in its profits overseas. Given the market is still emerging, it is also important to bear the risk associated to the volatility Canopy's cash flows have been subject to and consider that it is a reality that might still follow the company in the upcoming years. Lastly, our recommendation was based on our own analysis of the company and, therefore, should not be considered as certain.

Appendix

Financial Statements

Table 1: Forecasted Income Statement

CANOPY GROWTH CORPORATION														
FORECASTING REFORMULATED INCOME STATEMENT														
Fiscal Year Ending March 31														
(Expressed in CDN $000's)														
Core	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
Revenues														
Recreational revenue					140 532	406 192	527 951	686 453	892 854	1 161 726	1 512 094	4 688 439	11 779 644	21 882 488
Canada					140 532	192 660	245 449	312 702	398 382	507 539	646 604	1 783 689	4 920 391	9 411 628
Quantity (kg)					16 250	21 125	27 463	35 701	46 412	60 335	78 436	239 367	730 489	1 469 274
Price (per gram)					8.65	9.12	8.94	8.76	8.58	8.41	8.24	7.45	6.74	6.41
International						213 532	282 502	373 751	494 472	654 187	865 489	2 904 750	6 859 253	12 470 860
Quantity (kg)						16 250	21 938	29 616	39 981	53 974	72 866	270 545	825 637	1 660 650
Price (per gram)						13.14	12.88	12.62	12.37	12.12	11.88	10.74	8.31	7.51
Medical revenue	2 371	12 699	39 895	74 349	78 850	106 452	130 431	159 851	195 957	240 281	293 707	713 519	1 568 191	2 959 131
Canada	2 371	12 699	39 860	70 617	68 759	92 157	112 220	136 650	166 399	202 624	245 732	600 230	1 350 063	2 582 375
Quantity (kg)	324	1 696	5 136	8 421	7 324	9 009	11 080	13 629	16 764	20 619	25 259	68 255	169 841	341 610
Price (per gram)	7.31	7.49	7.76	8.39	9.39	10.23	10.13	10.03	9.93	9.83	9.73	8.79	7.95	7.56
International			35	3 732	10 091	14 295	18 211	23 201	29 558	37 657	47 975	113 289	218 128	376 755
Quantity (kg)			3	287	746	970	1 261	1 639	2 131	2 770	3 601	10 989	27 344	54 998
Price (per gram)			11.67	13.00	13.53	14.74	14.44	14.16	13.87	13.60	13.32	10.31	7.98	6.85
Other revenue				3 599	34 049	45 149	59 868	79 384	103 200	134 160	174 407	532 249	1 324 406	2 663 854
Excise taxes					(27 090)	(71 229)	(92 580)	(120 374)	(153 437)	(195 650)	(249 563)	(713 730)	(1 793 239)	(3 331 215)
% Recreational revenues					19%	18%	18%	18%	17%	17%	17%	15%	15%	15%
Total Revenues	**2 371**	**12 699**	**39 895**	**77 948**	**226 341**	**486 564**	**625 670**	**805 314**	**1 038 574**	**1 340 517**	**1 730 645**	**5 220 476**	**12 879 003**	**24 174 258**
Inventory production costs expensed to cost of sales	(2 400)	(12 796)	(15 293)	(40 213)	(175 425)	(358 255)	(437 644)	(535 136)	(655 632)	(803 930)	(986 002)	(2 228 755)	(3 623 877)	(4 483 153)
% Revenues	101%	101%	38%	52%	78%	74%	70%	66%	63%	60%	57%	43%	28%	19%
Fair value changes in biological assets included in inventory sold and other inventory char	(5 721)	(19 722)	(34 978)	(67 861)	(129 536)	(144 564)	(159 381)	(175 885)	(194 478)	(215 217)	(238 223)	(339 376)	(330 391)	(244 723)
% Inventory	131%	89%	76%	67%	49%	47%	45%	42%	40%	38%	36%	28%	22%	17%
Unrealized gain on changes in fair value of biological assets	8 576	38 805	49 090	96 721	167 550	597 885	730 376	893 079	1 094 173	1 341 665	1 645 522	3 840 818	7 331 855	11 799 282
% Revenues	150%	197%	140%	143%	129%	123%	117%	111%	105%	100%	95%	74%	57%	49%
Total COGS	**455**	**6 287**	**(1 181)**	**(11 353)**	**(137 411)**	**95 066**	**133 351**	**182 058**	**244 062**	**322 518**	**421 296**	**1 272 688**	**3 377 587**	**7 071 407**
Gross Margin	**2 826**	**18 986**	**38 714**	**66 595**	**88 930**	**581 629**	**759 021**	**987 372**	**1 282 636**	**1 663 034**	**2 151 942**	**6 493 164**	**16 256 589**	**31 245 665**
% Revenues	119%	150%	97%	85%	39%	120%	121%	123%	123%	124%	124%	124%	126%	129%
Sales and marketing	(2 685)	(5 653)	(12 960)	(38 203)	(154 392)	(255 446)	(328 477)	(422 790)	(545 251)	(703 771)	(623 032)	(1 305 119)	(2 833 381)	(4 834 852)
Cost per employee	(36)	(36)	(24)	(37)	(48)	(35)	(35)	(35)	(35)	(35)	(30)	(25)	(22)	(20)
Research and development	(267)	(721)	(810)	(1 453)	(15 238)	(37 535)	(52 127)	(72 461)	(98 122)	(126 649)	(130 806)	(276 278)	(420 553)	(684 213)
Cost per employee	(4)	(5)	(1)	(1)	(5)	(5)	(6)	(6)	(6)	(6)	(6)	(5)	(3)	(3)
General and administration	(4 875)	(8 177)	(16 858)	(43 819)	(168 434)	(414 892)	(576 187)	(800 954)	(1 084 599)	(1 399 922)	(1 445 871)	(3 053 848)	(4 294 907)	(6 766 877)
Cost per employee	(65)	(52)	(31)	(42)	(53)	(57)	(61)	(66)	(70)	(70)	(70)	(58)	(33)	(28)
Acquisition-related costs		(1 155)	(7 369)	(3 406)	(23 394)	189 680	208 648	104 324						
% Acquisitions		13%	2%	8%	1%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Share-based compensation expense	(1 559)	(3 110)	(8 046)	(29 631)	(182 837)	(396 158)	(483 947)	(591 754)	(724 999)	(860 914)	(818 038)	(1 131 750)	(1 627 054)	(2 566 078)
Compensation cost per employee	(21)	(20)	(15)	(29)	(57)	(54)	(52)	(49)	(47)	(43)	(39)	(22)	(13)	(11)
Share-based compensation expense related to acquisition milestones	(1 000)	(387)	(690)	(19 475)	(100 164)	(195 320)	(235 951)	(221 425)	(128 540)	(42 623)				
% Acquisitions	27%	4%	0%	45%	6%	6%	6%	6%	6%	6%				
Depreciation and amortization	(646)	(2 256)	(6 064)	(12 889)	(21 510)	(47 689)	(63 625)	(84 994)	(106 414)	(133 476)	(167 631)	(449 972)	(1 053 196)	(1 718 446)
% PP&E and Intangible assets	4%	3%	2%	3%	1%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Total Operating Expenses	**(11 032)**	**(21 459)**	**(52 797)**	**(148 876)**	**(665 969)**	**(1 157 360)**	**(1 531 667)**	**(2 090 054)**	**(2 687 925)**	**(3 267 355)**	**(3 185 379)**	**(6 216 966)**	**(10 229 091)**	**(16 570 465)**
Other (expense) income, net - Core	(1 191)	(481)	(1 193)	(21 620)	57 110	(122 026)	(156 233)	(200 046)	(256 165)	(328 053)	(420 145)	(1 192 040)	(2 400 475)	(3 742 018)
Foreign currency loss				(2 440)	(5 572)	(122 026)	(156 233)	(200 046)	(256 165)	(328 053)	(420 145)	(1 192 040)	(2 400 475)	(3 742 018)
% International revenues				65%	55%	54%	52%	50%	49%	47%	46%	39%	34%	29%
EBIT	**(9 397)**	**(2 954)**	**(15 276)**	**(103 901)**	**(519 929)**	**(697 756)**	**(928 880)**	**(1 302 728)**	**(1 661 454)**	**(1 932 374)**	**(1 453 582)**	**(915 842)**	**3 627 024**	**10 933 182**
% Revenues	-396%	-23%	-38%	-133%	-230%	-143%	-148%	-162%	-160%	-144%	-84%	-18%	28%	45%
Taxes														
Statutory taxes	2 490	783	4 048	27 534	137 781	184 905	246 153	345 223	440 285	512 079	385 199	242 698	(961 161)	(2 897 293)
Statutory tax rate	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%
Taxes Adjustments	(2 477)	(1 019)	(20)	(15 516)	(182 171)	(193 767)	(235 950)	(266 858)	(280 757)	(298 019)	(271 570)	(385 287)	(572 107)	(915 370)
Non-deductible expenses	(937)	(935)	(2 156)	(19 310)	(99 192)	(192 119)	(233 831)	(264 130)	(277 239)	(293 479)	(265 708)	(367 605)	(528 486)	(833 491)
% Share-based compensation expenses (non-deductible)	36.6%	26.7%	24.7%	39.3%	35.1%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%
Increase in unrecognized temporary differences - Core	(1 762)	335	2 258	(5 506)	(77 158)									
Rate differential					(4 060)									
Non-taxable portion of capital gains and losses				9 421										
Other	222	(419)	(122)	(121)	(1 761)	(1 648)	(2 119)	(2 728)	(3 518)	(4 540)	(5 862)	(17 682)	(43 621)	(81 878)
% EBIT	-2.4%	14.2%	0.8%	0.1%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Total Taxes	**13**	**(236)**	**4 028**	**12 018**	**(44 389)**	**(8 861)**	**10 203**	**78 365**	**159 529**	**214 060**	**113 629**	**(142 589)**	**(1 533 268)**	**(3 812 663)**
Other comprehensive income - Core			198	410	40 617									
NOPLAT	**(9 384)**	**(3 190)**	**(11 050)**	**(91 473)**	**(523 701)**	**(706 618)**	**(918 677)**	**(1 224 363)**	**(1 501 925)**	**(1 718 315)**	**(1 339 952)**	**(1 058 431)**	**2 093 755**	**7 120 519**

Table 2: Forecasted Balance Sheet

CANOPY GROWTH CORPORATION
FORECASTING REFORMULATED BALANCE SHEET

Fiscal Year Ending March 31
(Expressed in CDN $000's)

Core	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
Operating cash	47	254	798	1 559	5 069	10 896	14 011	18 034	23 258	30 019	38 756	116 906	288 409	541 352
% Revenues	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Amounts receivable	783	1 486	5 815	21 425	106 974	130 448	167 742	215 905	278 442	359 393	463 986	1 399 611	3 452 863	6 481 123
Collection period	121	43	53	100	173	98	98	98	98	98	98	98	98	98
Biological assets	2 028	5 321	14 725	16 348	78 975	676 860	1 407 235	2 300 315	3 394 487	4 736 152	6 381 674	20 475 170	49 241 378	97 023 826
Changes in fair value		3 293	9 404	1 623	62 627	597 885	730 376	893 079	1 094 173	1 341 665	1 645 522	3 840 818	7 331 855	11 799 282
Inventory	4 355	22 153	45 981	101 607	262 105	307 909	357 335	415 090	483 128	562 787	655 733	1 207 274	1 518 920	1 453 995
Holding Period	196	249	334	343	314	314	298	283	269	256	243	198	153	118
Prepaid expenses and other assets	764	489	4 285	19 837	107 123	82 178	110 956	149 955	203 060	275 199	373 055	1 395 186	3 800 187	7 875 475
% Operating expenses	7%	2%	8%	13%	16%	17%	18%	19%	20%	21%	22%	27%	30%	33%
% Growth						5%	5%	5%	5%	5%	5%	2%	2%	2%
Accounts payable and accrued liabilities	(4 278)	(6 107)	(15 386)	(89 571)	(226 533)	(94 647)	(121 706)	(156 650)	(202 024)	(260 758)	(336 646)	(1 015 490)	(2 505 231)	(4 702 390)
Payable period	142	104	106	220	124	71	71	71	71	71	71	71	71	71
Deferred revenue		(533)	(588)	(900)		8 303	10 677	9 730	11 997	15 486	23 992	67 650	164 691	308 537
% Revenues		4%	1%	1%		2%	2%	1%	1%	1%	1%	1%	1%	1%
Property, plant and equipment	18 360	44 984	96 270	303 682	1 096 340	619 475	807 697	1 054 208	1 377 362	1 801 371	2 356 856	7 707 311	22 936 749	46 133 996
PP&E per square-foot					0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Square-feet required					1 390 000	785 404	1 024 042	1 336 583	1 746 295	2 283 877	2 988 151	9 771 752	29 080 469	58 491 211
Kgs produced					24 320	47 353	61 741	80 585	105 287	137 699	180 161	589 155	1 753 310	3 526 533
Other long-term assets				8 340	25 902	12 429	15 982	20 571	26 530	34 243	44 208	133 354	328 987	617 517
% PP&E				2.75%	2.36%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%
Goodwill		20 866	241 371	314 923	1 544 055	1 544 055	1 544 055	1 544 055	1 544 055	1 544 055	1 544 055	1 544 055	1 544 055	1 544 055
Intangible assets	38	31 861	162 263	101 526	519 556	1 172 731	1 583 409	2 139 943	2 621 791	3 214 818	3 942 901	9 203 139	16 643 514	18 447 117
% Revenues			407%	130%	230%	241%	253%	266%	252%	240%	228%	176%	129%	76%
% Change						5%	5%	5%	-5%	-5%	-5%	-5%	-10%	-10%
Deferred tax liability - Core		(7 413)	(32 740)	(14 453)	(85 364)	(989 965)	(1 966 190)	(3 153 488)	(4 582 803)	(6 371 769)	(8 737 101)	(28 025 659)	(67 400 735)	(130 281 342)
PP&E		(1 097)	(1 126)	1 071	(10 876)	(6 578)	(8 577)	(11 195)	(14 626)	(19 129)	(25 028)	(81 844)	(243 567)	(489 900)
% PP&E		2.44%	1.17%	-0.35%	0.99%	1.06%	1.06%	1.06%	1.06%	1.06%	1.06%	1.06%	1.06%	1.06%
Intangibles		(8 436)	(42 703)	(25 428)	(78 163)	(272 322)	(367 686)	(496 920)	(608 810)	(746 518)	(915 588)	(2 137 076)	(3 864 818)	(4 283 635)
% Intangibles		26%	26%	25%	15%	23%	23%	23%	23%	23%	23%	23%	23%	23%
Biological assets		(7 201)	(20 615)	(29 780)	(39 850)	(859 533)	(1 787 026)	(2 921 133)	(4 310 605)	(6 014 365)	(8 103 987)	(26 001 094)	(62 530 846)	(123 209 020)
% Biological assets		135%	140%	182%	50%	127%	127%	127%	127%	127%	127%	127%	127%	127%
Loss carryforwards		9 100	30 494	35 157	42 867	146 814	195 445	274 106	349 585	406 589	305 847	192 701	(763 158)	(2 300 440)
% EBIT		308%	200%	34%	8%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Other		221	1 210	4 527	658	1 654	1 654	1 654	1 654	1 654	1 654	1 654	1 654	1 654
Other long-term liabilities - Core	(171)	(1 501)			(137 760)									
Invested Capital Core Business	**21 926**	**111 860**	**522 794**	**784 323**	**3 296 442**	**3 480 671**	**3 931 203**	**4 557 669**	**5 179 281**	**5 940 996**	**6 751 469**	**14 208 506**	**30 013 788**	**45 443 262**

Non-Core	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
Assets classified as held for sale			6 180											
Investments in associates				63 106	112 385	101 147	91 032	81 929	73 736	66 362	63 044	51 350	65 537	83 643
					78%	-10%	-10%	-10%	-10%	-10%	-5%		5%	5%
Marketable securities					2 034 133									
Deferred tax liability - Non-Core			(3 184)	(21 866)	(10 667)	(22 324)	(20 091)	(18 082)	(16 274)	(14 647)	(13 914)	(11 333)	(14 464)	(18 461)
Investments			(3 184)	(21 866)	(10 667)	(22 324)	(20 091)	(18 082)	(16 274)	(14 647)	(13 914)	(11 333)	(14 464)	(18 461)
% Investments in associates				35%	9%	22%	22%	22%	22%	22%	22%	22%	22%	22%
Other long-term liabilities - Non-Core					(50 058)	(50 058)	(50 058)	(50 058)	(50 058)	(21 447)				
Settlement liability					(28 611)	(28 611)	(28 611)	(28 611)	(28 611)					
Due to former shareholders of S&B					(21 447)	(21 447)	(21 447)	(21 447)	(21 447)	(21 447)				
Invested Capital Non-Core Business			**2 996**	**41 240**	**2 085 793**	**28 765**	**20 883**	**13 789**	**7 404**	**30 269**	**49 130**	**40 017**	**51 072**	**65 183**

Financial Assets	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
Excess cash	21 399	15 143	101 002	321 001	2 475 761	4 794 399	5 492 699	5 709 852	5 655 083	5 216 397	5 113 447			14 399 990
Deferred tax liability - Financial				2 783										
Other long-term liabilities - Financial			(766)	(61 150)	(34 000)	(8 445)	(11 144)	(14 706)	(19 406)	(25 608)	(33 792)			
Put liabilities				(61 150)	(6 400)	(8 445)	(11 144)	(14 706)	(19 406)	(25 608)	(33 792)			
Other financial assets		804	24 030	163 463	363 427	363 427	363 427	363 427	363 427	363 427	363 427	363 427	363 427	363 427
Current portion of long-term debt	(247)	(553)	(1 691)	(1 557)	(103 716)	(103 716)	(103 716)	(103 716)	(103 716)	(103 716)	(103 716)	(103 716)	(103 716)	(103 716)
Financial debt	(1 669)	(3 469)	(8 639)	(6 865)	(842 259)							(687 122)	(4 338 760)	
Net Financial Assets	**19 483**	**11 925**	**113 936**	**417 675**	**1 859 213**	**5 045 664**	**5 741 265**	**5 954 857**	**5 895 388**	**5 450 500**	**5 339 366**	**(427 411)**	**(4 079 049)**	**14 659 701**

Equity	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
Equity and Equity Equivalents	**41 409**	**123 785**	**639 726**	**1 243 238**	**7 241 448**	**8 555 101**	**9 693 351**	**10 526 315**	**11 082 073**	**11 421 765**	**12 139 965**	**13 821 112**	**25 985 812**	**60 168 146**
Transactions with Shareholders		85 872	507 415	623 545	6 682 068	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725

Table 3: Free Cash Flows and Financing Cash Flow

CANOPY GROWTH CORPORATION
FORECASTING REFORMULATED CASH FLOW STATEMENT

Fiscal Year Ending March 31
(Expressed in CDN $000's)

Core	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
NOPLAT	(9 384)	(3 190)	(11 050)	(91 473)	(523 701)	(706 618)	(918 677)	(1 224 363)	(1 501 925)	(1 718 315)	(1 339 952)	(1 058 431)	2 093 755	7 120 519
Depreciation and amortization	646	2 256	6 064	12 889	21 510	47 689	63 625	84 994	106 414	133 476	167 631	449 972	1 053 196	1 718 446
Operational Cash Flow	(8 738)	(934)	(4 986)	(78 584)	(502 191)	(658 929)	(855 052)	(1 139 369)	(1 395 512)	(1 584 838)	(1 172 321)	(608 458)	3 146 951	8 838 965
Invested Capital - Fixed Assets	18 398	97 711	499 904	728 471	3 185 853	3 348 689	3 951 143	4 758 777	5 569 738	6 594 487	7 888 021	18 587 859	41 453 305	66 742 685
Net CAPEX		(81 569)	(408 257)	(241 456)	(2 478 892)	(210 525)	(666 079)	(892 628)	(917 374)	(1 158 225)	(1 461 165)	(3 507 925)	(6 823 837)	(8 186 541)
Invested Capital - NWC and Others	3 528	14 149	22 890	55 852	110 589	131 982	(19 939)	(201 109)	(390 456)	(653 490)	(1 136 552)	(4 379 353)	(11 439 517)	(21 299 423)
Investment in NWC and Others		(10 621)	(8 741)	(32 962)	(54 737)	(21 394)	151 922	181 169	189 348	263 034	483 061	1 119 278	1 646 747	2 356 012
Investment Cash Flow		(92 190)	(416 998)	(274 418)	(2 533 629)	(231 919)	(514 157)	(711 459)	(728 027)	(895 191)	(978 104)	(2 388 648)	(5 177 091)	(5 830 530)
Free Cash Flow - Core Business		**(93 124)**	**(421 984)**	**(353 002)**	**(3 035 820)**	**(890 848)**	**(1 369 209)**	**(1 850 828)**	**(2 123 538)**	**(2 480 029)**	**(2 150 425)**	**(2 997 106)**	**(2 030 139)**	**3 008 436**

Non-Core	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
Operational Cash Flow		(203)	15 863	32 608	(30 896)	(4 424)	(3 981)	(3 583)	(3 225)	(2 902)	(2 757)	(2 246)	(2 866)	(3 658)
Invested Capital			2 996	41 240	2 085 793	28 765	20 883	13 789	7 404	30 269	49 130	40 017	51 072	65 183
Investment Cash Flow			(2 996)	(38 244)	(2 044 553)	2 057 028	7 882	7 094	6 385	(22 865)	(18 861)		(2 432)	(3 104)
Free Cash Flow - Non-Core Business		**(203)**	**12 867**	**(5 636)**	**(2 075 449)**	**2 052 604**	**3 901**	**3 511**	**3 160**	**(25 767)**	**(21 619)**	**(2 246)**	**(5 298)**	**(6 762)**

Free Cash Flow - Total		**(93 327)**	**(409 117)**	**(358 638)**	**(5 111 270)**	**1 161 757**	**(1 365 308)**	**(1 847 317)**	**(2 120 378)**	**(2 505 797)**	**(2 172 044)**	**(2 999 352)**	**(2 035 438)**	**3 001 674**

Financial	2015A	2016A	2017A	2018A	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2030F	2035F	2040F
Financial Result	37	(103)	3 712	38 832	(129 260)	49 969	86 184	86 184	86 184	86 184	86 184	86 184	(93 731)	86 184
Net Financial Assets	19 483	11 925	113 936	417 675	1 859 213	5 045 664	5 741 265	5 954 857	5 895 388	5 450 500	5 339 366	(427 411)	(4 079 049)	14 659 701
Investment in Net Financial Assets		7 558	(102 011)	(303 739)	(1 441 538)	(3 186 451)	(695 601)	(213 592)	59 469	444 888	111 134	938 443	154 444	(5 062 583)
Net Cash Transactions with Shareholders	46 922	85 872	507 415	623 545	6 682 068	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725	1 974 725
Financing Cash Flow		**93 327**	**409 117**	**358 638**	**5 111 270**	**(1 161 757)**	**1 365 308**	**1 847 317**	**2 120 378**	**2 505 797**	**2 172 044**	**2 999 352**	**2 035 438**	**(3 001 674)**

Disclosures and Disclaimers

Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

This report was prepared by Marta Carvalho and Matilde Simões, Masters in Finance students of Nova School of Business and Economics ("Nova SBE"), within the context of the Field Lab – Equity Research.

This report is issued and published exclusively for academic purposes, namely for academic evaluation and master graduation purposes, within the context of said Field Lab – Equity Research. It is not to be construed as an offer or a solicitation of an offer to buy or sell any security or financial instrument.

This report was supervised by a Nova SBE faculty member, acting merely in an academic capacity, who revised the valuation methodology and the financial model.

Given the exclusive academic purpose of the reports produced by Nova SBE students, it is Nova SBE understanding that Nova SBE, the author, the present report and its publishing, are excluded from the persons and activities requiring previous registration from local regulatory authorities. As such, Nova SBE, its faculty and the author of this report have not sought or obtained registration with or certification as financial analyst by any local regulator, in any jurisdiction. In Portugal, neither the author of this report nor his/her academic supervisor is registered with or qualified under COMISSÃO DO MERCADO DE VALORES MOBILIÁRIOS ("CMVM", the Portuguese Securities Market Authority) as a financial analyst. No approval for publication or distribution of this report was required and/or obtained from any local authority, given the exclusive academic nature of the report.

The additional disclaimers also apply:

USA: Pursuant to Section 202 (a) (11) of the Investment Advisers Act of 1940, neither Nova SBE nor the author of this report are to be qualified as an investment adviser and, thus, registration with the Securities and Exchange Commission ("SEC", United States of America's securities market authority) is not necessary. Neither the author nor Nova SBE receive any compensation of any kind for the preparation of the reports.

Germany: Pursuant to §34c of the WpHG (*Wertpapierhandelsgesetz*, i.e., the German Securities Trading Act), this entity is not required to register with or otherwise notify the *Bundesanstalt für*

Finanzdienstleistungsaufsicht ("BaFin", the German Federal Financial Supervisory Authority). It should be noted that Nova SBE is a fully-owned state university and there is no relation between the student's equity reports and any fund raising programme.

UK: Pursuant to section 22 of the Financial Services and Markets Act 2000 (the "FSMA"), for an activity to be a regulated activity, it must be carried on "by way of business". All regulated activities are subject to prior authorization by the Financial Conduct Authority ("FCA"). However, this report serves an exclusively academic purpose and, as such, was not prepared by way of business. The author - a Master's student - is the **sole and exclusive responsible** for the information, estimates and forecasts contained herein, and for the opinions expressed, which exclusively reflect his/her own judgment at the date of the report. Nova SBE and its faculty have no single and formal position in relation to the most appropriate valuation method, estimates or projections used in the report and may not be held liable by the author's choice of the latter.

The information contained in this report was compiled by students from public sources believed to be reliable, but Nova SBE, its faculty, or the students make no representation that it is accurate or complete, and accept no liability whatsoever for any direct or indirect loss resulting from the use of this report or of its content.

Students are free to choose the target companies of the reports. Therefore, Nova SBE may start covering and/or suspend the coverage of any listed company, at any time, without prior notice. The students or Nova SBE are not responsible for updating this report, and the opinions and recommendations expressed herein may change without further notice.

The target company or security of this report may be simultaneously covered by more than one student. Because each student is free to choose the valuation method, and make his/her own assumptions and estimates, the resulting projections, price target and recommendations may differ widely, even when referring to the same security. Moreover, changing market conditions and/or changing subjective opinions may lead to significantly different valuation results. Other students' opinions, estimates and recommendations, as well as the advisor and other faculty members' opinions may be inconsistent with the views expressed in this report. Any recipient of this report should understand that statements regarding future prospects and performance are, by nature, subjective, and may be fallible.

This report does not necessarily mention and/or analyze all possible risks arising from the investment in the target company and/or security, namely the possible exchange rate risk resulting from the security being denominated in a currency either than the investor's currency, among many other risks.

The purpose of publishing this report is merely academic and it is not intended for distribution among private investors. The information and opinions expressed in this report are not intended to be available to any person other than Portuguese natural or legal persons or persons domiciled in Portugal. While preparing this report, students did not have in consideration the specific investment objectives, financial situation or particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in any security, namely in the security covered by this report.

The author hereby certifies that the views expressed in this report accurately reflect his/her personal opinion about the target company and its securities. He/ She has not received or been promised any direct or indirect compensation for expressing the opinions or recommendation included in this report.

The content of each report has been shown or made public to restricted parties prior to its publication in Nova SBE's website or in Bloomberg Professional, for academic purposes such as its distribution among faculty members for students' academic evaluation.

Nova SBE is a state-owned university, mainly financed by state subsidies, students tuition fees and companies, through donations, or indirectly by hiring educational programs, among other possibilities. Thus, Nova SBE may have received compensation from the target company during the last 12 months, related to its fundraising programs, or indirectly through the sale of educational, consulting or research services. Nevertheless, no compensation eventually received by Nova SBE is in any way related to or dependent on the opinions expressed in this report. The Nova School of Business and Economics does not deal for or otherwise offer any investment or intermediation services to market counterparties, private or intermediate customers.

This report may not be reproduced, distributed or published, in whole or in part, without the explicit previous consent of its author, unless when used by Nova SBE for academic purposes only. At any time, Nova SBE may decide to suspend this report reproduction or distribution without further notice. Neither this document nor any copy of it may be taken, transmitted or distributed, directly or indirectly, in any country either than Portugal or to any resident outside this country. The dissemination of this document other than in Portugal or to Portuguese citizens is therefore prohibited and unlawful.

A Work Project, presented as part of the requirements for the Award of a Master's Degree in Finance from the Nova School of Business and Economics.

CBD-INFUSED EDIBLES: EMERGENCE OF A NEW MARKET

MATILDE DA FONSECA SIMÕES

Work Project carried out under the supervision of:

Rosário André

03-01-2020

Abstract

The following report will focus on the emergence of a new market: CBD-infused edibles. New consumers' needs and preferences are being created as they seek healthier, plant-based options for snacks and beverages and show willingness to try CBD-infused products. The exponential growth of this segment and its potential is generating deals between cannabis and beverage companies, who seek to take advantage of it. The current concerns of this market are the high regulation involved and the uncertainty towards the future legalization of adult-use marijuana in most countries. Nevertheless, Canopy Growth is already investing millions in hemp production and CBD-infused products development.

Keywords

CBD

Edibles

Beverages

Legalization

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

CBD-Infused Edibles: Market Size and Potential

Upon the legalization of recreational marijuana in Canada, the market for edibles and beverages infused with cannabis components has been evolving at a fast pace. The North American market size for CBD-infused edibles is estimated to reach $4.1 billion by 2022 (CAGR of 33%)[1].

Cogent Infotech conducted a study using social listening techniques, such as monitoring digital conversations of individuals to track their mentions of CBD-infused products. It revealed an exponential increase in the number of times CBD edibles are mentioned in conversations. As a matter of fact, over the last three years, they have been quoted approximately 158 thousand times. Exhibit 1 illustrates the most desired CBD products measured by how many times they were mentioned by individuals. It shows that most people are interested in trying CBD-infused drinks as they were cited over 23 thousand times.

An additional important insight from this study regards the potential consumers of the market. Even though 54% of digital conversations were initiated by males, 46% of women were equally engaged in the conversation. In what comes to the consumers' age span, 9% were underage, 12% were placed between 18 and 24 years old, 31% within 25 and 44 years old, 35% were between 45 and 64 years old and the remaining 12% were over 64 years old[2].

Taking only the US and Canadian markets into consideration, which have the largest potential for legal CBD-edibles at the moment, and according to the previously mentioned numbers, an estimation on the current potential market for the CBD-infused edibles was performed (exhibit 2). Considering population per age group of Canada and the US and current marijuana consumption per age group, it is possible to obtain the current number of marijuana consumers, which totals 42.11 million in the US and 7.76 million in Canada. When applying the previously mentioned percentages of prospect consumers for CBD-infused edibles into these values obtained, I get a total of 7.36 million potential consumers in the US and 1.41 million in Canada.

[1] PRNewswire. 2019. "Strong Demand for CBD Edibles to Create a $4.1 Billion Market by 2022". Accessed December 2019. https://www.prnewswire.com/news-releases/strong-demand-for-cbd-edibles-to-create-a-4-1-billion-market-by-2022--300890266.html
[2] Cogent Infotech. 2019. "Insights Into the $22 billion CBD Edibles". Accessed December 2019. https://cogentinfo.com/resources/social-listening-analytics/cbd-industry-insights.pdf

Cannabis Companies' Interest and Investment in the Industry

The increasing potential of this market is appealing to cannabis' companies, which has been incentivizing and leading them to invest millions in the development of CBD-infused products. For instance, Tilray has already announced a partnership with the World's largest brewer, Anheuser-Busch InBev, where each invested $50 million to jointly research and produce cannabis-infused non-alcoholic beverages, one of the most consumer-demanded products[3]. Moreover, HEXO Corp. and Molson Coors created a joint venture, Truss Beverage Co., which will be launching six CBD-infused beverages in Canada. The first, Flow Glow, a natural spring water containing 10mg of CBD, was planned to be launched in December 2019[4].

Impact on the Alcoholic and Non-Alcoholic Beverages Market

Consumers are progressively disregarding the consumption of sugar-filled drinks in favor of healthier alternatives, such as water, which surpassed soda consumption for the first time in 2016[5]. These recent trends for healthier, plant-based alternatives to sodas and alcoholic beverages, combined with the legalization of marijuana, are driving consumers away from the beverages market. In fact, beer companies have been facing a 5-year decline in the US beer consumption, which has been creating interest from these companies in the CBD market. Among them there is a giant in the industry, Diageo, which owns the Guinness brand. It is currently in talks with several and different Canadian marijuana companies in order to develop cannabis-based beverages. Phivida Holdings Inc. is also taking advantage of the market through the launch of its Oki brand of active-hemp, CBD-infused waters and iced teas. The company is targeting health-concerned consumers, looking for new products to improve their well-being[6].

---

[3] Beverage Daily. 2019. "AB InBev to Launch Its CBD-Infused Beverages in Canada in December". Accessed December 2019. https://www.beveragedaily.com/Article/2019/10/11/AB-InBev-CBD-infused-beverages-to-launch-in-Canada-in-December

[4] Beverage Daily. 2019. "Molson Coord to Launch Six Cannabis Beverage Brands in Canada: Starting with Flow Glow". Accessed December 2019. https://www.beveragedaily.com/Article/2019/10/17/Molson-Coors-and-Truss-to-launch-6-cannabis-beverages-in-Canada

[5] Fortune. 2017. "Americans Are Now Drinking More Bottled Water Than Soda". Accessed December 2019. https://fortune.com/2017/03/10/soda-tax-bottled-water-americans/

[6] PR Newswire. 2019. "CBD Beverages—Possible Next Big Disruptor in the Drinks Industry". Accessed December 2019. https://www.prnewswire.com/news-releases/cbd-beveragespossible-next-big-disruptor-in-the-drinks-industry-300815422.html

Despite the thrill over the CBD-infused drinks market and the large investments that big beverage companies are doing, they still hold some concerns associated with this new market. Companies are evaluating whether these varieties of drinks will be well-received by consumers or if ~~it~~ they will harm their reputation. One of the reasons why such might occur is due to the lack of public knowledge on the matter. People are generally not familiar with the concept of CBD and potentially unaware if it is even safe or legal.

<u>People's Interest in the Industry</u>

Given the companies' uncertainty on consumers' behaviours towards change, it is important to assess their potential reactions. In that sense, A.T. Kearney ran a study on the perception of consumers regarding non-psychoactive cannabis (CBD-related), *The Cannabis Opportunity*[7]. The study revealed that if a well-known beverage company were to become involved in the industry, 60% of the respondents would maintain a neutral position on their perception of the organization. In the case of non-alcoholic beverage companies, 25% would improve their perception. The same goes for alcoholic ones. While 61% of the respondents would not change their perception of a company if it entered the cannabis-infused beverages market, 21% would perceive it as an improvement. Furthermore, most of the people surveyed are willing to try a legal therapeutic product infused with Cannabis (78% in the US and 75% in Canada). Hence, and in accordance with the new consumer trend for "health-consciousness", alcohol and soda companies intend to take advantage of the CBD-market and fill the gap in customer preferences.

<u>Legalization</u>

Following the market potential and the interest of companies, it is now of the upmost importance to assess the progress and recent developments in the legalization process of CBD-infused edibles. In the United States, even though the legalization of cannabis-infused products is still a sensitive topic, it is expected to take place soon. Such would imply the removal of

[7] AT Kearney. 2019. "The Cannabis Opportunity". Accessed December 2019. https://www.atkearney.com/documents/20152/1555409/The+Cannabis+Opportunity.pdf/bf18db64-c9b9-eb10-013c-4f4c250525a6?t=1539899590994

hemp from the Controlled Substances Act, meaning that it would no longer be an illegal substance. Nonetheless, cannabis-derived products would still be regulated by the FDA (Food and Drug Administration) under the Federal Food, Drug and Cosmetic Act. Some states, such as California, have already allowed the sale of CBD-infused edibles and beverages in licensed dispensaries, although these permissions violate FDA regulations.

In Canada, cannabis-infused edibles and beverages became legal on October 17, 2019, exactly one year after the legalization of recreational marijuana in dry forms ("joints"). That being said, the circulation of these edibles in the appropriate selling points can take from 60 to 90 days, as Health Canada must inspect and approve the products prior to sale[8]. One constraint in this matter is that the products cannot be appealing to children, i.e. companies are not allowed to produce gummy worms infused with cannabis.

Briefly addressing Europe, it is more difficult to predict when and if the EU will legalize these products, since the legalization process of medical marijuana is still slow and controversial. Only Germany, Czech Republic, Italy, and Malta have yet legalized medical marijuana. The UK is on its way to doing the same. Therefore, recreational marijuana and edibles are even further from becoming legal.

Canopy Growth Involvement in the CBD market

As previously mentioned, cannabis companies are taking advantage of the market and investing vigorously in the development of CBD-infused edibles. Canopy Growth does not fall behind.

Constellation Brands has invested over C$5 billion in Canopy Growth, acquiring 38% of the company. From the moment of the investment, there have already been some developments of CBD-infused products by the company. Canopy has been preparing its entrance in the cannabis edibles market one year prior to its legalization, by partnering with Hummingbird, a well-

[8] Leader Post. 2019. "Cannabis Edibles Now Legal in Canada, But Won't Be Available for 60 Days". Accessed December 2019. https://leaderpost.com/news/saskatchewan/legal-but-unavailable-what-you-need-to-know-about-cannabis-edibles

known chocolate brand, to produce a jointly made product[9]. Furthermore, Canapar, a 49% subsidiary of Canopy Rivers (the venture capital firm of Canopy Growth) is currently building the largest facility to extract CBD in Ragusa, Sicily[10]. By focusing on the extraction of CBD from what was once hemp waste, production is expected to be 10 times more profitable for local farmers than growing other produces, like cereal.

Even though the industry is still emerging, as these products are only legal since October 2019 and exclusively in Canada, it is possible to see in exhibit 3 that the 3-year rolling-beta of Canopy Growth is decreasing in the last semester of 2019 (from almost 1.3 to 1). While the beta is still similar to that of the pharmaceutical industry (0.98), there is a clear declining tendency in the last months, which can indicate the beta is reaching values closer to that of the beverages and food industries (0.79 and 0.78, respectively)[11]. Hence, there is the possibility that CBD-infused edibles are slowly resembling these industries, driving away from the pharmaceutical purpose.

Appendix

Exhibit 1: CBD-edibles mentions from 2016 to 2019

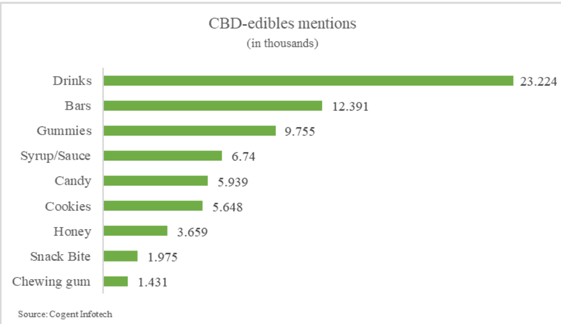


Exhibit 3: 3-year Rolling Beta of Canopy Growth

Source: Canopy Growth Equity Research project

Exhibit 2: Estimated consumers for the CBD-edibles market in the US and Canada

	Age groups	Population (in millions)	Marijuana consumption	Marijuana consumers (in millions)	CBD-edibles consumption	Potential CBD-consumers (in millions)
United States	15 - 24	42.96	27%	11.60	21%	2.44
	25 - 34	45.69	30%	13.62	16%	2.18
	35 - 44	41.28	21%	8.46	15%	1.27
	45 - 54	41.63	11%	4.41	16%	0.71
	55 - 64	42.27	10%	4.02	19%	0.76
	65+	52.42	8%	3.98	12%	0.48
Canada	18 - 29	5.11	24%	1.23	20%	0.25
	30 - 49	10	13%	1.30	31%	0.40
	50 - 64	7.76	11%	0.85	27%	0.23
	65+	6.6	6%	0.40	12%	0.05
					Total	**8.76**

Source: Statista and StatCan

[9] Ottawa Citizen. 2018. "Eyeing Legal Edibles, Weed Giant Teams Up With Almonte Chocolate-Maker Hummingbird". https://ottawacitizen.com/business/local-business/eyeing-legal-edibles-weed-giant-teams-up-with-almonte-chocolate-maker-hummingbird
[10] Forbes. 2019. "How the Cannabis Industry Is Revolutionizing the Beverage Sector". Accessed December 2019. https://www.forbes.com/sites/joemicallef/2019/05/22/how-the-cannabis-industry-is-revolutionizing-the-beverage-sector/#3773bfe65673
[11] Data on Betas taken from Bloomberg on January 3rd, 2019